

Eating Right for Glaucoma: Everyday Choices That Matter

Date: May 13, 2026

Featuring: Amy D. Zhang, 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, "Eating Right for Glaucoma: Everyday Choices That Matter." 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 \$52 million in scientific grants exploring the root causes, prevention strategies, and treatments to end this sight-stealing disease.

Now, I would like to introduce today's guest speaker. Dr. Amy Zhang is an associate clinical professor at the University of Michigan Kellogg Eye Center and serves as a well-being director. A glaucoma specialist and former glaucoma fellowship director at Case Western, she drives innovation in glaucoma care while championing ophthalmic ergonomics and clinician wellness to reduce burnout across health care. Dr. Zhang's research examines how emotions shape the lived experience of glaucoma and influence patient well-being, informing more compassionate, whole-person care. Recognized for leadership, she was selected for the American Glaucoma Society's Health

Care Policy Leadership Development Program in 2024 and advocates through state and national ophthalmology organizations. Dr. Zhang, thank you so much for joining us today.

DR. AMY ZHANG: Thank you, Dr. Liu. It is a pleasure to be here, and I'm really grateful for this opportunity to talk about glaucoma nutrition and practical everyday choices that can support eye health.

DR. JIMMY LIU: Thank you so much, Dr. Zhang. We're also so honored to have you on the call today, as well. So, for the first question to start off: May is Healthy Vision Month. Can you explain how eye health is connected to what we eat?

DR. AMY ZHANG: Absolutely. The eye is a very metabolically active organ, meaning that it needs a steady supply of oxygen, nutrients, and good blood flow to function well. So what we eat affects many systems that are important to eye health—our blood pressure, our blood sugar, cholesterol, inflammation, and vascular health. For glaucoma specifically, the biggest proven risk factor we treat is still eye pressure. Diet does not replace glaucoma medications, laser, or surgery when those are needed. But nutrition can support the overall health of the optic nerve and the small blood vessels that nourish the eye. A diet rich in vegetables, fruits, whole grains, nuts, healthy fats, and lean proteins may help to reduce some of that oxidative stress and inflammation, both of which are pretty relevant to long-term eye and optic nerve health. I like to frame nutrition as one part of a whole-person approach. It supports the body and the eye, but it also works alongside regular eye exams and evidence-based glaucoma treatment.

DR. JIMMY LIU: Thank you so much for that explanation, Dr. Zhang. The next question that we have is: There's growing interest in the gut microbiome and overall health. What do we know about the connection between gut health, inflammation, and eye conditions like glaucoma?

DR. AMY ZHANG: That's a great question, Dr. Liu. So, the gut microbiome refers to the community of bacteria and other microorganisms that are living in our digestive tract. We're learning that the gut microbiome can influence the immune system, inflammation, metabolism, and even the health of those blood vessels that I mentioned. In glaucoma, though, the research is still developing. We don't have yet a simple answer, like "Eat this for your microbiome and you will prevent glaucoma." But there is a growing interest in how chronic inflammation, immune signaling, and vascular health may affect the optic nerve. A healthy gut microbiome is generally supported by fiber-rich foods. These would include vegetables, fruits, beans, lentils, whole grains, nuts, and seeds. Fermented foods, like yogurt with live cultures, kefir, kimchi, sauerkraut, or miso, may

also be helpful for some people. At the same time, diet-rich and ultra-processed foods, added sugars, and low fiber may be less supportive of a healthy microbiome. So, while we still need more glaucoma-specific research, the gut health recommendations overlap pretty nicely with what we already recommend to our patients for overall health, which is more fiber, more plant diversity, and fewer highly processed foods.

DR. JIMMY LIU: Thank you so much, Dr. Zhang, for that explanation. It's good to know that overall health for your eyes and glaucoma is also supported by just healthy eating in general as a good practice. So the next question that we have is: Which nutrients—specifically are most important for supporting eye health and potentially protecting against glaucoma?

DR. AMY ZHANG: Yeah. Once again, I think the key is that there is no single glaucoma vitamin per se that has been proven to prevent or cure glaucoma. However, there are several nutrients that may support eye and optic nerve health. So, some important ones include nitrates from leafy green vegetables, which is thought to support nitric oxide pathways and healthy blood flow; antioxidants, such as vitamins C and E, which can also protect tissues from oxidative stress; certain other vitamins, like lutein and zeaxanthin, are well known for supporting retinal and macular health. Omega-3 fatty acids found in fatty fish and some plant sources may also support anti-inflammatory pathways and vascular health. Magnesium plays a role in vascular function and nerve health. B vitamins and folate, which are involved in optic nerve and vascular health, as well. The best way to get most of these nutrients though is through food, rather than relying heavily on supplements. Unless a clinician has identified a deficiency or a specific need, I would not recommend just supplementing with vitamins.

DR. JIMMY LIU: Great. Thanks so much, Dr. Zhang, for that very clear explanation of the nutrients that are important for supporting eye health and glaucoma. You mentioned in your previous answer about leafy greens, especially with nitric acid. Can you explain a little bit more, not just about the nitric acid, but is there anything else about leafy greens that are really beneficial for the eyes? And then a follow-up question that one listener asked was: Is broccoli as good as spinach or kale?

DR. AMY ZHANG: Yeah, sure. Those are good questions. Leafy greens are a great example of a food group that brings in multiple benefits all at once. Spinach, kale, collard greens, arugula, Swiss chard, and romaine lettuce contain vitamins, minerals, fiber, antioxidants, and other vitamins, such as lutein and zeaxanthin. One area of interest in glaucoma we had already talked about is in the source of dietary nitrates. Since the optic nerve depends on healthy blood flow, this is one of the possible reasons why leafy greens may be more beneficial in this aspect. There have been some observa-

tional studies that found associations between higher intake of leafy greens and lower risk of developing certain types of glaucoma, though these studies do not prove cause and effect. Still, leafy greens, I should say, are low risk, nutrient dense, and beneficial to overall health, so they are excellent daily habits. And I think a simple goal that would be important would be maybe to add one serving of leafy greens most days, whether it be in a salad or greens in a soup, spinach in your eggs, or kale blended into a smoothie are some good ways.

With the specific question about broccoli, when we think about leafy greens, broccoli doesn't quite fit into that category. However, broccoli is still an excellent option. It has vitamin C, fiber, and plant compounds, which are being studied for its antioxidant and anti-inflammatory effects. Spinach and kale are generally higher in lutein and zeaxanthin, so they might have a slight edge for those specific eye nutrients, but broccoli absolutely belongs in an eye-healthy diet. So I think the best answer is sort of a variety. Broccoli, kale, spinach, Brussels sprouts, cabbage, collards—they all sort of bring different benefits. If you enjoy eating broccoli, I would say keep eating it.

DR. JIMMY LIU: Thanks so much, Dr. Zhang, for that explanation. So the next question is moving towards things like diets. How do diets like Mediterranean, plant-based, or low-carb diets compare when it comes to glaucoma?

DR. AMY ZHANG: So, for glaucoma specifically, we don't have enough evidence to say one named diet is the definitive best glaucoma diet, but we can look at eating patterns that support cardiovascular health, blood sugar control, lower inflammation, and healthy aging. From that standpoint, I would say the Mediterranean diet is probably one of the strongest patterns for an overall health standpoint because it emphasizes vegetables, fruits, whole grains, legumes, nuts, olive oil, fish, and modest amounts of dairy or poultry. It is associated with better heart and brain health, and those vascular benefits are likely relevant to the eye, as well.

The plant-based diet can also be very healthy, especially when it is built around whole foods like beans, lentils, vegetables, fruits, whole grains, nuts, and seeds. The key is to avoid making it a processed plant-based diet. And what I mean by that is a diet that is full of refined carbohydrates and packaged foods. People who are fully vegan should also pay attention to nutrients like vitamin B12, omega-3, iron, zinc, calcium, and vitamin D.

A low-carb diet can be helpful for some people, especially those managing diabetes or insulin resistance, but quality matters. A low-carb diet rich in vegetables, nuts, seeds, fish, olive oil, and lean proteins is very different from one in processed meats and satu-

rated fats.

Very restrictive diets can also be very hard to sustain. My practical recommendation is a plant-forward Mediterranean-style pattern, lots of vegetables, especially leafy greens; beans and whole grains; nuts and seeds; healthy fats, like olive oil; fish, if you like to eat it; and fewer ultra-processed foods.

DR. JIMMY LIU: Perfect. Thanks so much, Dr. Zhang, for that explanation about diets and glaucoma. And so, for someone who's trying to eat more healthy foods, kind of what you described a bit below, it may seem kind of intimidating to swap a lot of the things that we're used to eating to something that is more related to a healthier lifestyle. So, what are some simple swaps or additions that you recommend to listeners that could make making this switch not feel so overwhelming or restricted?

DR. AMY ZHANG: Yeah, that is such a great question. I think this is where I like to be very practical. We do not need perfection, certainly. It's very hard to be perfect. We do need repeatable habits, though. So, some of the simple ideas may include adding maybe a handful of greens in a day. And how we can do that is maybe put the spinach in the eggs or soup or pasta or even a smoothie. Another way is to swap out sugary cereal for oatmeal with berries and nuts. You can also choose whole-grain bread or brown rice instead of white bread or white rice when possible. Adding beans or lentils a few times a week will also help to add in that protein component. Snacking on fruits, nuts, or yogurt instead of ultra-processed snacks is another way. And one final fix is perhaps using olive oil instead of butter when it fits the meal. I tell patients to pick one change and make it easy. Once that becomes routine, add another. These small steps become very powerful when they're sustainable.

DR. JIMMY LIU: Perfect. Thanks so much for that explanation, Dr. Zhang. As a person who likes eating white rice a lot, maybe I'll switch over to brown rice to help improve my diet. And so the next question that we have—and I think you kind of alluded to this a little bit earlier—but are there common foods people eat every day that may unknowingly harm eye health?

DR. AMY ZHANG: Yeah, we certainly don't intentionally mean to ingest harmful food, so I would definitely be very careful to not label an individual food as bad in isolation. It is usually the overall pattern that matters most. But certain common dietary patterns can indirectly affect eye health by worsening blood pressure, diabetes risk, inflammation, and vascular health. Some of these examples may include frequent sugary beverages, such as soda, sweet tea, and energy drinks. Highly processed snack foods that are super high in sodium and refined carbohydrates is another one that I would try to avoid

if possible. Also, diets very high in added sugar, diets and ultra-processed foods and low in fiber would also be ones that I would tend to avoid. These foods may not directly damage the eye overnight, but over time they can contribute to health conditions that can affect the eyes, including diabetic eye disease, vascular problems, and possibly optic nerve vulnerability. So, the goal is not to fear; it is awareness. If most of your meals are built around whole, minimally processed foods, there is definitely room for some flexibility, even if you do resort to eating some Doritos every once in a while.

DR. JIMMY LIU: Thanks so much for that, Dr. Zhang. All right, so now we've talked a little bit about foods. Let's talk about things that I think a lot of people on the call like to drink—coffee, and specifically caffeine. So how does coffee or energy drink consumption affect eye pressure and glaucoma risk?

DR. AMY ZHANG: Yeah, that is a super important question. As a coffee drinker myself, I definitely need my one cup in the morning. So, with regards to caffeine, it can cause some short-term increases in eye pressure in some people. The effect is usually modest, but it may matter for individuals who already have glaucoma, ocular hypertension, or are very sensitive to caffeine. For most people, moderate coffee consumption is not necessarily bad, and I generally do not tell every glaucoma patient that they must stop drinking coffee. But I do recommend avoiding large amounts of caffeine, especially in a short period of time.

Energy drinks, though, are a little bit different because they contain high doses of caffeine plus other stimulants and sugar. Those can affect the heart rate, blood pressure, sleep, and possibly eye pressure. So I would be more cautious about energy drinks compared to a simple cup of coffee. A practical approach is moderation. One or two cups of coffee a day may be reasonable for many people, but if someone has advanced glaucoma, unstable eye pressures, and drinks a lot of caffeine, it is definitely worth discussing with their ophthalmologist.

DR. JIMMY LIU: Thanks so much for that information, Dr. Zhang. Okay, so now we talked about caffeine. Let's talk about alcohol. And so, does moderate drinking of alcohol have an impact on eye health?

DR. AMY ZHANG: Yeah, alcohol is a bit complicated. Alcohol can temporarily lower eye pressure, but it is not a glaucoma treatment. And we do not recommend drinking alcohol to manage eye pressure. Moderate alcohol intake may be acceptable for some adults, but alcohol can affect sleep, balance, mood, blood pressure, liver health, and medication safety. Heavy alcohol use is definitely harmful to overall health and can contribute to nutritional deficiencies and neurologic problems. So I guess my advice is

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consistent with general practice health guidelines. If you do not drink, there is no eye health reason to start. If you do drink, keep it moderate and discuss it with your primary care physician, especially if you're taking multiple medications, have liver disease, have a history of substance use disorder, or at risk for falls. I also encourage people to notice how alcohol affects their sleep and the next-day energy levels, as these are important parts of being well or feeling well.

DR. JIMMY LIU: Perfect. Thanks so much for that explanation, Dr. Zhang. And so, we talked separately about diet and I think a little bit about lifestyle, so let's combine them together. How do diet and lifestyle habits work together when it comes to managing glaucoma risk? And can diet alone prevent glaucoma?

DR. AMY ZHANG: Great question. With regards to that, diet alone cannot prevent glaucoma, and it cannot replace proven glaucoma treatments. This is one of the most important takeaways. Glaucoma is a very complex disease. Eye pressure is the main modifiable risk factor that we target. But age, family history, race and ethnicity, corneal thickness, anatomy of the eye, vascular factors, and other medical conditions can all play a role. Lifestyle habits can support overall eye health. These include eating a nutrient-rich diet, staying physically active with moderate amounts of exercise, not smoking, maintaining good blood pressure and diabetes or sugar maintenance, getting a good night's sleep, taking your glaucoma medications consistently if prescribed, and keeping regular eye appointments. I would also avoid prolonged positions that may raise eye pressure, such as in certain forms of inverted yoga poses that may cause the eye pressure to increase while your head is sort of bent below the chest level. So, diet is supportive. It is part of the foundation, but the cornerstone glaucoma care is still regular monitoring and treatment with an ophthalmologist.

DR. JIMMY LIU: Thanks so much, Dr. Zhang, for that explanation. Where can we find reliable, science-backed information about nutrition and eye health moving forward?

DR. AMY ZHANG: Yeah, that is certainly a really important point. I think oftentimes when we're talking about nutrients and supplements, there's a lot of advertisements that come across and say, "Hey, take this medication and it could help your glaucoma, or your macular degeneration." So, having reliable sources that we turn to is very important. Some of those resources may include your own ophthalmologist, as well as your primary care physician. For other glaucoma-specific information, organizations such as the BrightFocus Foundation, as well as the American Glaucoma Society, do both provide patient-friendly science-based information. And I think, Dr. Liu, you'll be including a link of some of these references at the end of our talk.

I also encourage people to be really cautious of the online claims that promise to cure glaucoma. If something sounds too good to be true, it probably is. And glaucoma is a very serious condition, and delaying proven treatment can lead to permanent vision loss. Good nutrition can once again support eye health, but it should be paired with regular eye exams and evidence-based glaucoma care.

DR. JIMMY LIU: Perfect. Thanks so much, Dr. Zhang. And yes, we will be providing those links and resources when we release the Chat transcript in a couple weeks' time. So, we have some time for some listener questions. A lot of them are asking about supplements and things like herbal teas that can help with glaucoma. So are there any supplements or things like that that reduce eye pressure and/or are neuroprotective?

DR. AMY ZHANG: At this time, there is no supplement or herbal tea that has been proven to reliably lower eye pressure or prevent glaucoma progression the way that prescribed glaucoma treatments do. Some compounds are being studied for possible neuroprotective effects. These include nicotinamide, ginkgo biloba, antioxidants, omega-3s, and others, but we do not yet have enough evidence to recommend them as a standard of care for glaucoma treatment. Herbal teas, while they can be certainly very enjoyable and may have a calming routine, which is pretty valuable, but they should not be viewed as glaucoma therapy. Also, natural doesn't always mean risk-free. Supplements and herbs can interact with blood thinners, blood pressure medications, diabetes medications, anesthesia, and other treatments. So, the safest advice is: Do not stop glaucoma drops or treatment in favor of supplements and always tell your doctor what supplements or herbs that you're taking.

DR. JIMMY LIU: Perfect. Thanks so much, Dr. Zhang, for that explanation. And I think we have time for one last question. We talked a little bit about lifestyle and physical activity—and I think you did mention something about a yoga pose and making sure that if someone has glaucoma not to do a specific yoga pose—but is there any other physical activities that people with glaucoma should prevent or not do?

DR. AMY ZHANG: Yeah, that is a very interesting question. I think for overall general health, we do recommend moderate aerobic activity. I think what happens is during those exercise moments, there are times where the intraocular pressure is lowered. However, for certain things like lifting, if you're lifting something super heavy or doing sort of lift training, during those acute few seconds to maybe a minute afterwards, the intraocular pressure of the eyes does rise. Although I don't really tell people to not lift at all, I do think it is something that we have to discuss more, especially in patients that have more severe glaucoma. And then certainly going back to the yoga, any time where you're doing any poses or any activities where your head is below your heart level, that

can cause sort of just transient elevations of your eye pressure. So those are things to consider. Perhaps you can still do yoga, but do veer away from some of those inverted poses.

DR. JIMMY LIU: Fantastic. Thanks so much, Dr. Zhang, for all the advice and answering all of our questions. So that's all the time we have for questions today. So again, thank you so much, Dr. Zhang, for answering so many of our questions and all the information you shared with us. I would like to mention that both BrightFocus Foundation's and the American Glaucoma Society's websites have a wealth of information about glaucoma. Please visit <https://www.brightfocus.org/> and <https://www.americanglaucomasociety.net/home> to learn more. So, Dr. Zhang, before we close, do you have any final advice for our audience?

DR. AMY ZHANG: Yes, it's been such a fun experience to talk about glaucoma in this context. I think as a day-to-day clinician, I oftentimes spend a lot of time talking with patients about their eye pressure, medications, laser, and surgery. And those still, of course, remain the foundations of glaucoma care. But as my role being the well-being director for my department, I also think about the daily habits that support the whole person, such as nutrition, movement, sleep, and stress. So, I do think that it's really important to keep the big picture in mind. So, if you have glaucoma or are at risk for having glaucoma, keeping your regular eye appointments and following through with the treatment plan is still the most important. But nutrition can be a supportive daily habit, not as a cure, and certainly not as a source of guilt. You do not need to eat perfectly or make a lot of meaningful changes. Just start with one practical step—maybe adding a leafy green most days and cutting back on the sugary drinks, or choosing more whole foods instead of processed foods. So, that would be my takeaway advice.

DR. JIMMY LIU: Awesome. Thanks so much, Dr. Zhang, for that advice. You've been an incredible host today, and we thank you so much for taking time out of your busy day to share with us all this information. So, thank you so much. We will be taking a short break for the month of June, so our next Glaucoma Chat will be on Wednesday, July 8, 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](#)

Eating Right for Glaucoma: Everyday Choices That Matter

- [Research funded by National Glaucoma Research](#)
- [Overview of Glaucoma](#)
- [Treatments for Glaucoma](#)
- [Resources for Glaucoma](#)

Helpful treatment options or resources mentioned during the Chat include—

- [American Glaucoma Society](#)
- [National Glaucoma Research Program](#)