Glaucoma Part 4 – How Food, Movement, and Sleep Influence Glaucoma Progression Transcript

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Glaucoma Awareness Month Introduction

I know that there's this inconvenience of having to urinate more often, especially at night. But if that means that you're protecting your vision and protecting your optic nerve, isn't it worth it?

That's how I always frame it. Isn't it worth it to make that lifestyle or add that one thing you're doing at bedtime to your bedtime routine to protect your optic nerve health?

Once you lose those optic nerve ganglion cells, once you lose those fibers, they're gone for life. You cannot regrow them. They don't come back. So you need to protect them and do what you can.

It's within your power. Welcome to the IQ Podcast. I'm Dr. Rani Banik, here to help you boost your IQ with powerful insights that connect your eyes, your brain, and your whole body wellness.

Welcome to the IQ Podcast, where you can gain insights into your vision health and your brain health and raise your IQ. I'm your host, Dr. Rani Banik, also known as America's Integrative Neuro-Optimologist.

And in honor of January being Glaucoma Awareness Month, I'm doing a four-part series all about glaucoma. So in case you missed an episode, please go back and tune in.

In part one of the series, I talked about, first of all, the foundations. What is glaucoma? How does it affect the optic nerve? Who is at risk? And what are the two main categories of glaucoma, open and closed angle glaucoma?

In part two of this series, I talked about what are the five most important tests you need to get if you're being worked up for glaucoma. Let's say you're what we call a glaucoma suspect or you've been diagnosed with glaucoma and we need to monitor the course of the disease to prevent progression.

Now, in part three of this series, I talked about the traditional treatments of glaucoma, which are based in medications, either eye drops and or pills or surgeries, whether that be a laser surgery or an intraocular surgery.

So please tune into that if you have glaucoma and you want to know what's the best treatment approach. Now, finally, in part four, today's episode, I am so excited to bring this episode to you because I think this episode will provide you with a lot of the tools and strategies you need to really promote your optic nerve health, to proactively combat damage to the optic nerve.

Today, we're going to be talking about nutrition and lifestyle for glaucoma. So let's get right into it. Hello, I'm Dr. Rani and I'm here to talk about something we often take for granted, our vision.

In my book, Beyond Carrots, Best Foods for Eye Health A-Z, I delve into how crucial it is to be proactive about your vision health.

Nutrition Basics for Optic Nerve Health

Certain eye issues are quite common, such as dry eye and eye strain, while others frequently develop with age like cataracts, macular degeneration, diabetic retinopathy, and glaucoma.

Some of these types of eye conditions can be debilitating and even lead to loss of vision. The good news is that many of these sight-stealing conditions are preventable if you take the right steps.

Your eyes are precious and they deserve the best care possible. To ensure healthy vision for life, you need to provide your eyes with the proper nutrition they need.

Nutrients like lutein, zeaxanthin and bioflavonoids, also omega fatty acids, are like fuel for your eyes, keeping them strong and vibrant. But here's the truth.

Sometimes our diets have gaps. That's where my Ageless Eyes supplement bundle comes in. It's the result of years of research and my passion for eye health.

The Ageless Eyes bundle contains the three essential supplements I recommend to my patients. Let's start with Fortify, a blend of powerful ingredients that protect against stressors like blue and UV light, eye strain, free radicals, and oxidative stress.

Next is Nourish, a complete multivitamin. Nourish provides the foundational building blocks your eyes need for cellular function and repair, along with powerful bioflavonoids that support the delicate structures within your eyes.

And then there's Soothe, a unique complete blend of omegas, three, six, seven, and nine. This blend of omega supports a healthy inflammatory response, nourishes dry eye, and helps fight against macular degeneration.

Remember, taking care of your eyes isn't just about today, it's an investment in your future. By being proactive now, you can enjoy healthy vision for years to come so you can continue reading, using a device, staying independent, and seeing the faces of your loved ones.

So, join me in taking the first step towards a lifetime of clear, vibrant vision. It's time to introduce your eyes to the Ageless Eyes Bundle. I invite you to learn more on my website about each of the powerful supplements that make up the trio in the Ageless Eyes Bundle.

Let's embark on this journey together because your eyes deserve nothing but the best. The Ageless Eyes Bundle. See the world with clarity and confidence.

All right, when we think about nutrition and lifestyle for glaucoma, we first need to put everything in the framework of what are we trying to achieve with nutrition and lifestyle?

And it's important to remember that glaucoma is not just having an eye pressure problem. A lot of people equate having glaucoma to having high eye pressure.

Yes, it is a risk factor for glaucoma, but there are many other things to consider which will then guide us in our nutrition and lifestyle approach. So we need to consider our genetic risk.

impaired blood flow to the optic nerve, mitochondrial dysfunction. If you remember back to biology and chemistry class, the mitochondria are the organelles within each of our cells that produce energy.

So we need to optimize energy production by ourselves. Next, we need to think about oxidative stress and combating oxidative stress with antioxidants.

That's perhaps the best way to do it. And then finally, glaucoma typically does involve an element of inflammation or chronic inflammation. So we think about all of those disease processes, all of those root causes of glaucoma, and ultimately they can lead down to the pathway of neurodegeneration, which is death of cells within the optic nerve, the ganglion cell axons within the optic nerve, die off and that leads to vision loss.

So think of it this way in terms of root cause and then the final outcome, which is what we want to avoid, which is neurodegeneration. So if we combat the root causes by, again, using nutrition very selectively, also making key lifestyle choices, we can protect the optic nerve and prevent damage.

Now here I wanted to show you an image or a series of images of an individual who was initially a glaucoma

suspect. So the image on the left is an individual's optic nerve and you can see that the cup, which is the center part right here, is a little bit bigger than it should be than is normal.

So this I would say is probably like a 0.5, 0.55 cup. And then about 20 years later, you can see how much damage the optic nerve has sustained, where the cup gets significantly larger.

This is probably now about a 0.8 cup. And you can see that the blood vessels don't look very healthy. They are narrowed. And this nerve, unfortunately, has undergone a lot of glaucoma optic nerve damage with vision loss.

What I want at the point of showing you this is that we want to prevent this progression from happening. And the progression doesn't happen overnight.

It happens over the course of years to decades and usually decades before someone goes from what you see on the left to what you see on the right. So there is time to intervene, which is the good news here.

Let's first dive into nutrition for glaucoma and supporting optic nerve health. So I mentioned earlier that oxidative stress is a key factor in glaucoma and we want to provide our bodies with enough antioxidants.

Now, when we think about antioxidants, there are antioxidants that our bodies naturally make, like glutathione. And then there are antioxidants that our bodies cannot make, that we need to get through our diet.

And these would include antioxidants like vitamins C and E and A and a host of minerals as well that are antioxidants. Next, to support energy production by our mitochondria, it is really important that we have enough B vitamins.

And here I'm going to generalize and say that all the B vitamins are important. So B1, B2, B3. I'm going to jump forward to B9 and B12. B9 happens to be folate, by the way.

And so all of these B vitamins are important for our optic nerve health because they are important in the energy production pathways within our mitochondria.

Next, we want to preserve blood flow to the optic nerve. And nitrates, which are compounds found in certain foods, like leafy green vegetables, are a wonderful example or a great source of nitrates.

And studies have shown that nitrate-rich foods can reduce the risk of glaucoma progression, and presumably by improving blood flow, relaxing blood vessels, opening up the blood vessels, and allowing more perfusion to the optic nerve.

And then finally, omegas are important as well, because omegas, particularly omegas like omega-3s, D-H-A-E-P-A, as well as an omega-6 called GLA, gamma-linolenic acid, omega-7s, and omega-9s like oleic acid, which is found in olive oil, are anti-inflammatory omegas.

And these are fatty acids, some of which our bodies can produce, others we cannot produce, like the DHA EPA, we cannot produce those. We need these to fight inflammation and also for the integrity of our cell membrane.

So omegas have a dual function when it comes to supporting optic nerve health. Now, how can you get all of these nutrients into your diet to support your optic nerve?

The most important thing you can do is to eat more plants, period. If you just do that, eat more plants. And what do I mean by more plants? I mean at least three to five cups a day of colorful fruits and veggies.

You can also include nuts in this category, legumes. beans, these are all plants, even spices. Of course, you're not going to eat three to five cups of spices, but you can certainly add them to your meals and they will support your optic nerve health.

And by the way, the more colorful the foods, the better. So various different colors, mix them up.

Key Foods and Research for Glaucoma

So various greens, shades of green and blue and yellow and orange and red. I probably missed a few there along the way, but even some purples and blacks can be very, very helpful because they have important nutrients.

So eat three to five cups a day. Leafy greens are a wonderful source of a lot of the nutrients I shared earlier in the previous slide. Berries. Berries are amazing, especially the darker berries like blueberries, blackberries, bilberries.

Why? I don't want to get too much into the weeds here, but The color of the berry is because of pigments called anthocyanins. And these anthocyanin pigments are powerful antioxidants for the plant, and they protect our bodies as well.

They're also antimicrobial, meaning that they can fight infections. And so studies have shown that having anthocyanins in one's diet or through supplementation can help to lower eye pressure.

And we'll talk a little bit more about that in just a moment when we talk about supplementation. But berries are a wonderful addition to one's diet for optic nerve health.

Next, omega-3 rich foods. So if you eat fish, fish are amazing for omega-3s, particularly the smash fish. Now, smash stands for salmon, mackerel, anchovies, sardines, and herring.

These are the five types of fish that are richest in DHA and EPA. And if you're going to eat this fish, make sure you're getting them wild caught, not farm raised, because farm raised can have high levels of mercury.

You want to avoid that. So wild caught fish, the smash fish. Now, if you don't eat fish, like myself, I'm vegetarian, I do not eat fish. So you can get your omegas through other means, whether that be seeds like chia seeds, flax seeds, hemp seeds, have omega-3 precursors, have an omega-3 precursor called ALA, and also nuts.

Nuts are a great source of omega-3s as well. And then finally, well, that's the last bullet point here, nuts, seeds, and legumes will give you omegas plus some of the amazing minerals that are important for optic nerve health.

So have a colorful, variety-rich diet centering on plants, but you can also have some select animal products as well. So what does study show when it comes to glaucoma and nutrition?

Well, this is so interesting. The first study that cited here. Actually, a lot of eye doctors don't even know this. And I'm trying to make the awareness more eye doctors to be aware of this so that they can then share it with their patients.

But there's one study published back in 2012. So this is actually like about 14 years ago that this was published. showing that people who had over three servings of fruit per day had a 79% decreased risk of glaucoma progression compared to those who had less than one serving a day.

I'll just share with you a little bit of detail about the study. This was looking at African-American women who are very high risk for glaucoma. So, three plus servings of fruit, 79% decreased risk of glaucoma progression.

Another study showed that people who had leafy greens, high levels of leafy greens in their diet, had a 20 to 30% decreased risk of glaucoma. And this is also fascinating.

One cup of tea a day conferred a 74% decreased risk of glaucoma. Now, what kind of tea was this? This was black tea. So I know a lot of people have veered more towards green tea, matcha tea, which I love, by the way.

The study wasn't done using those types. It was black tea. So there are polyphenols in the tea that are antioxidants. And they, again, confer protection to the optic nerve.

There are so many ways, simple ways, by which you can decrease your glaucoma progression risk simply by including some of these types of foods in your diet.

Simple, simple, simple. Now, there are studies also looking at specific nutrients and glaucoma. For example, riboflavin, which is B2. Now also, there's also a big emphasis on B3, which is niacin, or niacinamide, or nicotinamide.

It's also known as, and we'll talk about that when we get to the supplementation part, magnesium for optic nerve health. All of these foods, all of these vitamins, nutrients are important.

I know also below vitamin E and the omegas. The best way to do it is to get that diversity in your diet. Three to five cups a day. Yes, keep that in mind and please share it.

Pass it along with your friends and family members. Three to five cups a day is what is recommended and that has been scientifically shown to prove to have benefit for the optic nerve.

Now, something that's very much so underrated when it comes to glaucoma and optic nerve health is simply hydration. Many people simply do not have enough hydration to support adequate blood flow to their optic nerves and their brains, by the way.

And so when it comes to hydration, I'm a big, big advocate of hydration. It doesn't have to be only water. It can be other liquids. Even a lot of fruits and vegetables are rich in water.

And so that can count as well. But try to stay away from too much caffeinated beverages because that will dehydrate you. And also, when you're thinking about hydration, avoid too many sugary drinks as well.

But I like to use this equation when I tell my patients how much they should be drinking. There's actually a formula you can use. Now, of course, I'm going to share it with you, but make sure that you check with your primary care doctor to make sure that this is appropriate for you.

Because if you have heart issues or kidney issues, you may need to adjust the numbers. But what I tell my patients is you take your body weight in pounds, divide by two, and that's approximately the number of fluid ounces you should be drinking every day.

So as an example, if you weigh 150 pounds, then you should be drinking about 75 fluid ounces a day. Yes. That's more than eight glasses, by the way. Calculate that.

Again, just as a disclaimer, if you have heart issues, kidney issues, you will have to modify that number. And also, hydration at bedtime. So I typically tell my patients, make sure you drink at least eight ounces before bed to keep your blood volume up, to preserve blood flow to your optic nerve.

And I know for some people, they're reluctant to do that because that means that they will have to wake up at night to go to the bathroom. But I always give them the risk benefit ratio.

I know that there is this inconvenience of having to urinate more often, especially at night. But if that means that you're protecting your vision and protecting your optic nerve, isn't it worth it?

That's how I always frame it. Isn't it worth it to make that lifestyle or add that one thing you're doing at bedtime to your bedtime routine to protect your optic nerve health.

Because once you lose those optic nerve ganglion cells, once you lose those fibers, they're gone for life. You cannot regrow them. They don't come back.

So you need to protect them and do what you can. It's within your power. All right, the other thing I always tell my patients is when you're thinking about nutrition for glaucoma and optic nerve health, it's not just benefiting your

vision.

What these foods do is they also support your brain health. Yes, your brain health, which is, you know, your optic nerve is an extension of your brain.

Of course, they support your brain health, but it also supports many other aspects of healthy living, including cardiometabolic health. GI health and skin health and your immune system health.

So what you're doing for glaucoma is good for your brain and good for the rest of your body. So you get multiple benefits by eating this way. Next, supplementation for glaucoma.

Now, this is a topic that almost every patient who comes to my practice asks me, Dr.

Supplement Options and Cautions

Vani, what vitamins can I take? What can I do as a supplement regimen for glaucoma? Now, I'm going to share some of the research with you. And it's still a little bit controversial.

Things are still not yet set in stone. And I'm going to give you the pluses and the minuses of supplementation for glaucoma. So there has been a rising interest in vitamin B3, also known as niacin or niacinamide or nicotinamide.

These are various forms of niacin or B3. That high levels of B3 can protect the optic nerve. And what does B3 do for your optic nerve? Well, it decreases the inflammatory response, it decreases oxidative stress, and it decreases apoptosis, which is the fancy medical term for cell death or programmed cell death.

And you don't want nerves that are nerve axons that have been compromised to die off. And B3, presumably, hypothetically, can prevent that from happening.

And so the studies have looked at, now there have been studies done at various different centers around the world. The studies have looked at very high doses of B3 in the form of nicotinamide, starting at 1,000 or 1,500 milligrams a day, going up to 3,000 milligrams a day.

And I'll just share with you the US recommended daily allowance of niacin, or vitamin B3, is 15 milligrams a day. So this is almost 100 to 300 times what is considered needed by our body.

So I'm not exactly sure. I wasn't involved in these trials, how these numbers came about, but these are the numbers that have been, you know, are being used in the studies.

In conjunction with that, there have been other studies that have shown the benefit of pyruvate in combination with niacinamide to promote mitochondrial energy production and protecting the optic nerve.

So pyruvate at a dose of 1,000 to 3,000 milligrams a day. Now, I do not suggest that if you have glaucoma or if you're at risk that you go out and you buy yourself mega supplements and start taking these amounts.

I do not suggest this because this needs to be done under the auspices, under the supervision of a provider. Please do not do this on your own because it's not without risk.

Now, there are studies that have shown that these high levels of vitamin B3 and pyruvate can lead to liver toxicity and liver failure. So it needs to be supervised.

It needs to be prescribed. Please do not do this on your own. But I wanted to share the research with you in terms of which direction a lot of my colleagues in the glaucoma space are taking for supplementation for glaucoma.

Hopefully, within the next three to five years, we'll have a lot better guidance on this and perhaps personalized guidance recommendations. But stay tuned for that.

Other supplements that have been shown for glaucoma include, this is a very interesting paper, looking at this compound called mirtogenol. Now, mirtogenol is actually a combination of pine bark extract, which is pycnogenol, and berry extract.

So it's a combination of two ingredients. And what the study showed was that taking this supplement can actually reduce eye pressure. So it was a small study, only 38 people.

And they all had elevated eye pressure condition, which is ocular hypertension, which in some patients is a precursor to glaucoma. And the people who took the actual supplement with Mirtogenol had a three-millimeter, three-point decrease in their eye pressure compared to the people who took the placebo, meaning not Mirtogenol.

So there are a couple of supplements on the market that have Mirtogenol in them. There's one that I really like. It's called MitoQ, actually MitoQi, which has not just Mirtogenol.

It's got this ingredient MitoQ, which is a shortened form of Coenzyme Q10, which can support the optic nerve. It's also got lutein and zeaxanthin in it.

It's got a couple of other ingredients, not just Mirtogenol, but this is something that I recommend to my glaucoma patients if they want to have Mirtogenol as a supplement or start taking it.

To my knowledge, it has not been exclusively studied in glaucoma, but again, it has that ingredient in it. And also to my knowledge, there's really no significant risk or side effect to taking this supplement.

But please, as a disclaimer again, check with your eye doctor. By the way, a lot of eye doctors may not know about this. So I hope that if you do check with your eye doctor and they kind of give you a quizzical look and they've never heard of this before, please share the podcast with them and have them take a listen and see what they think and then guide you based off of that.

Now, other supplements or ingredients that have been looked at for glaucoma include ginkgo biloba, which is traditionally a Chinese herb. This showed some benefit, but only when taken long term in the range of 15 years of ginkgo biloba supplements, and then N-acetylcysteine, which is a precursor to glutathione, which is an antioxidant, and alpha lipoic acid, which our bodies can make, but it's also an antioxidant.

These are some of the other ingredients that have been looked at for glaucoma support, optic nerve support, and you may find them in some supplements on the market that are branded as optic nerve support or glaucoma supplementation.

Now, moving on to lifestyle for glaucoma. We know from multiple studies that one of the key things you can do to promote a healthy lifestyle is regular physical activity.

This includes both yoga as well as aerobic activity. So we know it's good for our heart, we know it's good for our brain, it's also good for our eyes and specifically for glaucoma.

Now, I do strongly suggest that people include some kind of activity movement or routine in their daily lives or within their weekly schedule. The American College of Cardiology actually recommends, but this may seem like a lot to some people, 30 minutes of physical activity where your heart rate is elevated five times a week.

So that equates to 150 minutes of rigorous physical activity where your heart rate is elevated. I know some people may feel overwhelmed by that, Nicole, and that's totally understandable.

If you have more of a sedentary lifestyle, you can't just immediately jump to 150 minutes of physical activity a week, but you can do it slowly. And you can maybe walk a little bit more, take the stairs.

If you're watching television, get up, do some stretches, do some chair yoga, start small and work your way up to that.

Exercise, Sleep, and Blood Pressure

And that may include running, swimming, bicycling. I love not just yoga. I love hot yoga because it gets my heart beat up. I actually also do a HIIT class.

So that really gets my heart beat up because that's high intensity interval training in a heated environment. So those are just some of the ways that I use to try to get movement and exercise into my weekly schedule.

But you choose what works best for you. Tennis, pickleball, all great options for getting your heart beat up. Now, given that, there are a couple of caveats when it comes to exercise that I want to share with you.

If you're doing yoga, please avoid prolonged head down positions more than 30 seconds, because when you put your head down, that increases the eye pressure.

So things like downward dog, headstands, handstands, you want to avoid prolonged positions like that to protect blood flow to your optic nerve and not have the eye pressure spike up.

Also, if you do weight training, you need to keep breathing. Don't hold your breath. This is called a Valsalva maneuver. When you're straining really hard and holding your breath, that will raise not just your blood pressure, it will raise your eye pressure.

So avoid excess Valsalva and straining. And finally, tight goggles if you're swimming, because if you have really tight fitting goggles around your eyes, that can also potentially elevate the eye pressure.

So yes, Swimming is wonderful. It's a great exercise. It's a wonderful exercise to get your heart rate up, but be cautious and just be safe. Other things, lifestyle modifications for glaucoma.

People may not realize that their sleep position may impact their glaucoma risk. So some people are side sleepers or they sleep with their face down in the pillow.

And if you have glaucoma or if you're a glaucoma suspect, that is a no-no. Why? Because when you're sleeping for six, seven, eight plus hours at night and you have direct pressure on your eyes, on your face, that will raise the eye pressure.

And there are studies that show that people who are side sleepers, the side that they tend to sleep on, whether it's their left side or right side, the eye pressure in that eye tends to be higher, and also there tends to be more damage to the optic nerve.

So there are specialized pillows that you can use to try to keep your head steady so you're not putting pressure on your face and your eye. I will share those in the show notes below the podcast if you're interested in getting one of those types of pillows.

Also, for people who wear tight neckwear, whether it be a necktie or a choker, you want to not wear it as tight because studies have also shown that when you have tight pressure around your neck, that can potentially elevate the eye pressure as well because it decreases blood flow or venous outflow and raises eye pressure.

So these are just some things to think about when it comes to lifestyle modification for glaucoma. managing blood pressure. Blood pressure is a risk for glaucoma and it's not just having high blood pressure, it can also be having low blood pressure.

So you want to get a blood pressure machine and check your blood pressure at home periodically. I typically tell my patients you want to get a baseline for at least two weeks, different times of the day, early morning, afternoon, evening.

If you happen to wake up at night to use the restroom, check it then as well before you Get up to go to the

bathroom while you're still in bed. Check your blood pressure.

And you're just looking to make sure it's not going too low, meaning less than 90 over 60 or too high, meaning over 160 systolic. You want to try to keep your blood pressure in a more healthy range.

And keep in mind that blood pressure fluctuates. And that's why I recommend checking it three times a day. It's not always the same morning versus evening.

And it may also change after certain activities. So you may want to check your blood pressure after a workout. And yes, it may temporarily go up, but then it should come back down pretty quickly.

And so it's just good to get a sense of what your body is doing. And you wouldn't know unless you checked. So don't guess. Actually, get the blood pressure cuff, and now we have, you know, there are very inexpensive options you can get.

I'll include my favorite option as well in the show notes for a blood pressure machine, the one that I use myself and I have my family use. Going back to sleep for a moment.

Now, this is a risk factor that a lot of people don't realize that may put them at risk for optic nerve damage and glaucomitis progression, which is sleep apnea.

Now, what is sleep apnea? Sleep apnea is when you're sleeping at night, your airway relaxes and it closes down and you're not getting enough oxygen and people actually stop breathing.

There are micro periods of apnea, which means that the body stops breathing. And when that happens, there is lack of oxygen getting into your blood, into your bloodstream and getting to the optic nerve.

And we know that sleep apnea is a risk factor for glaucoma, as it is for other optic nerve diseases as well. I won't get into that too much today, but sleep apnea is not a good thing for your vision.

So if you snore at night, it's possible you may have sleep apnea. If you have disrupted sleep at night where you wake up gasping or gagging for air, you may have sleep apnea.

So I would suggest doing a screening test and getting checked out because you can prevent vision loss. And now I know the image here showing somebody wearing a bulky CPAP device, which a lot of people can't tolerate.

But nowadays there are many other options for treating sleep apnea. including oral devices, implantable devices, and weight loss as well sometimes helps to treat sleep apnea.

There are now medications out there that are FDA approved to treat sleep apnea. So get tested. Let's say you're not sure if you snore or not. You don't sleep with anyone and you just don't know, which is very reasonable.

If you don't have somebody in the room with you, how would you know if you snore? So I recommend an app called Sleep Lab. And I will put the link in the show notes below because this app, what you do is you download it to your phone.

It is free. And you put your phone by your bedside at night and you record.

Emerging Therapies and Closing Remarks

and it listens to your sleep pattern and it tells you whether it's picking up whether you're snoring or not or perhaps even not breathing and so again it's a great way to screen at home without yet going to the doctor but please if you suspect you may snore or maybe your partner's saying that you snore a lot do the home test first and then talk to your doctor about getting a proper sleep study done and getting diagnosed if you have sleep apnea.

Now, I wanted to end this with some really promising therapies for glaucoma. There's a lot of research being done in terms of how to protect the optic nerve, whether it be through something called photobiomodulation, which is light therapy, or perhaps even stem cells.

I'm not yet aware, perhaps down the line, there may be genetic studies as well, gene therapy for glaucoma. But for now, photobiomodulation is very, very promising.

Now, this is using various wavelengths of light, red light, infrared light, and even yellow light at about 570 to 590 nanometers to help to promote optic nerve health, to promote mitochondrial function, and prevent cell death or apoptosis.

So there are commercially available lights on the market. I will put these into the show notes, but the one device that has been approved by the FDA using photobiomodulation is right now just approved for macular degeneration.

And by the way, February is macular degeneration awareness month, so I'll be talking all about that coming up. soon but this therapy again it's not commercially available the device that is FDA approved so I actually do home therapy myself and for some patients I do recommend home light therapy.

You can get these devices and it's important if you're going to do this at home to do it in a safe way. Now overall these light therapies have not shown any significant risk to your vision but still you want to be safe when you're doing them and so what I typically recommend is whatever device you're using.

Red light should be between 660 to 670 nanometers. Infrared light, 850 to 860 nanometers. And the yellow or amber light that I was just describing, between about 5, I would say let's say 570 to 590 nanometers.

When you do the therapy, when you're doing it at home, again, not under the auspices of the provider and eye doctor. Be safe, do it with your eyes closed because those wavelengths still get through your eyelids.

So you still get the benefit even though your eyes are closed. Please do not look directly at the light. Do it with your eyes closed. Next, make sure you're at a safe distance away from the device.

And I typically recommend about 12 to 14 inches, which is about reading distance. And so sit further back, have the device there at face level or eye level, eyes closed, and you don't have to do it every day.

Actually, only three minutes, three times a week has been shown to be helpful for macular degeneration. So by extension, if you're doing this for optic nerve support, that's what I would recommend as well.

No more than three minutes, three times a week. All right, so that is the end of my PowerPoint for today, and it's also the end of our four-part series on glaucoma in the IQ podcast.

So I know I shared a lot of information with you, not just today, but through the whole series, but hopefully you found it helpful. You can always go back and re-listen to certain episodes if you want more clarification.

I highly recommend that you share this with your friends and family, particularly part one, as well as part four. Because some of these interventions, again, nutrition and lifestyle interventions, which are within your control, you can do these at home, can support not just your optic nerve, but your overall eye health and your brain health and your overall health.

So please share it with your family and friends. Also, please to support the podcast. I would appreciate it if you would subscribe, not just on whatever platform you're listening to or watching from, whether that be YouTube or Spotify or Apple, but across all platforms, because the more reach we have, the better we can keep creating this information and this podcast, because that's my goal, is to spread the message about the importance of eye health and how we can support our vision.

Well, again, I hope you enjoyed today's episode. And next month, again, February is coming up soon. It is Macular

Degeneration Awareness Month. And I'm going to be doing similarly a series on macular degeneration.

So please stay tuned for that. In the meantime, I hope you all enjoy the rest of your day. And I look forward to seeing you all on the next episode of the IQ Podcast.

Thank you so much for listening. Thank you for tuning in to the IQ Podcast. I hope you enjoyed today's episode and learned something new to help you boost your IQ.

Leave us a review and share the podcast with your family and friends. Stay connected with me for more eye-opening insights on eye health, nutrition, and lifestyle.

Until next time, keep your vision clear and your IQ sharp.