

Macular



Chats

What You Need to Know About Cataracts and Macular Degeneration

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Transcript of Teleconference with Dr. Emily Chew, Director of the Division of Epidemiology and Clinical Applications at the National Eye Institute, National Institutes of Health

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

MS. DIANA CAMPBELL: Hello. My name is Diana Campbell, and I'm pleased to be here with you for today's Macular Chat: What You Need to Know About Cataracts and Macular Degeneration. This Chat is brought to you today by BrightFocus Foundation. Macular Degeneration Research is one of our programs at BrightFocus. We fund exceptional scientific research worldwide to defeat Alzheimer's disease, macular degeneration, and glaucoma, and we provide expert information on these heartbreaking diseases. You can find much more information on our website, www.BrightFocus.org. I am pleased to introduce today's guest speaker, Dr. Emily Chew, who is the Director of the Division of Epidemiology and Clinical Applications at the National Eye Institute, National Institutes of Health—or NIH—in Bethesda, Maryland. She is also the Chief of the Clinical Trials Branch in the division. Her research interests include Phase 1 and 2 clinical trials in epidemiologic studies and retinovascular diseases, such as age-

related macular degeneration, diabetic retinopathy, and other ocular diseases. She has worked extensively in large, multicenter trials headed by the staff from her division, including the Early Treatment Diabetic Retinopathy Study, ETDRS, and the Age-Related Eye Disease Study, A-R-E-D-S or AREDS, and the AREDS2 study, as well, which she chairs. She works on other clinical trials in collaboration with other institutes within the NIH, such as Actions to Control Cardiovascular Risk in Diabetes, or the ACCORD trial, and she chairs the ACCORD Eye study. She directs the clinical portion of the international study Macular Telangiectasia Project. Dr. Chew, thanks for joining us today.

DR. EMILY CHEW: That was a great introduction, and thank you for being so generous, Diana. It's great to be here with you. Thank you for having me.

MS. DIANA CAMPBELL: It's a pleasure. Okay, well, let's start with a big thank you to you, actually. On behalf of everyone living with macular degeneration, I want to thank you for dedicating your career to research in this field. Most if not all of the people on this call are impacted by macular degeneration and are pretty familiar with the AREDS studies and may take the AREDS2 vitamins. I wanted to draw for them the connection that you're the chair of that study that has such an impact on their daily life. And we certainly talk about AREDS quite a bit in the same forum on these Chats. So, thank you so much for your hard work on that and making such a difference in the lives of everybody that's listening today. But today, we'll talk about another area of your research in the study Cataract Surgery and the Risk of Developing Late Age-Related Macular Degeneration. Before we get to the details and results of the study, let's start off by explaining what a cataract is and how it affects our vision. We'll start from the beginning.

DR. EMILY CHEW: Sure, that's a good way to start. I'll give you a very short anatomy class 101, very basic. When we look at someone's eye, you can see the sort of clear part like the cornea, which is like the clock on your wristwatch that's nice and clear. Then you see the iris, which is different people's different colors. But then, behind that is a little lens, which is quite clear. It's like an elliptical shape, and it's very, very

clear. During lifetime, it changes over time. Remember, when you were very young, you could read up close to your nose, and then as you get older, your arms are not long enough. You have something called presbyopia because your cataract is really able to expand and be a different refraction, so you can actually see up close and far away, but we lose that ability to read [close] as we get older. So, that's part of that lens that looks on it. But what becomes problematic is when, instead of being a clear, clear thing to go look through, it has impurities, and it's got little opacifications that occur, and over time that can blur your vision.

There are different types of cataracts. You can have the straight blurring of vision that occurs, or there's a type that occurs when you're driving at night. When you're driving at night, your pupils get very large because it's somewhat dark, and it gets into the area where impurities in the peripheral part of the lens, and you get a really glare and have difficulties driving even though you can see perfectly well. But at nighttime, that may be a problem. So, sometimes people get cataract surgery even if they have good vision, because of the blur from that particular aspect. And finally, you can get cataracts that's in what we call the posterior subcapsular in the back of the lens, and that's usually from taking steroids that you need, and that affects your reading vision, the sight in the center; you're going to have a lot of trouble with reading. It can affect you in many, many different ways, and different people obviously get it. People with diabetes have an increased risk for having that. People who have taken lots of steroids might also be at risk for that, as well. And people can obviously have trauma, and they can have an injury to the eye, and that can cause them problems. And smoking is a risk factor. Smoking is never good for you. Not good for your eyes at all for macular degeneration or cataract or for your heart or for anything else. So, if you can do that, stop smoking. That's really important. And there's people who've had surgeries in their eyes. If they've had glaucoma surgery, or they've had what we call vitrectomy surgery, where it would go inside the eyes and move the jelly part of the eyes for diabetes, or for macular holes, or other things—that increases the risk of cataract, as well. Those, in a nutshell, are the reasons people get cataracts.

MS. DIANA CAMPBELL: Great, thank you. What are some of the initial

symptoms of cataracts that people might be noticing?

DR. EMILY CHEW: I think one of the things [people] might notice, it would be blurry vision. That's one of them. And I described the fact that one other type of cataract happens when you're in the dark, doing things in the dark, and especially when you're driving because the lights are in your eyes and you get the glare. That's a different type of cataract. And then you can have just specifically, problems with reading. The posterior subcapsular cataract will cause that sort of problem. Those are all the different things that relate to cataracts. Most people present to their doctor because they can't do the things they want to do, because they either can't read or can't do some other ... driving may be more difficult. Those are the usual symptoms that they come to their doctor, who then examines them to find out what the issues are.

MS. DIANA CAMPBELL: Great. Once it has been determined that somebody has cataracts, what is the course of treatment?

DR. EMILY CHEW: For the course of treatment, and now, we have really great treatment. Cataract surgery is really, really excellent. It's done very quickly, a team does it all the time, and certainly, there's no other treatment other than surgical treatment, really, for removing the cataract. And most patients usually get, depending on the type of cataracts you have and depending, for example, if you're very short-sighted in one eye, in both eyes, then you tend to have to take the cataract out. And you can probably do it pretty quickly for the other eye because there will be some discrepancies between the two eyes that would be very hard for your brain to understand. So, usually it's surgical removal, which is done by most ophthalmologists, who are very good at this. And it's a highly successful treatment. Ninety percent of patients end up with very good vision, or 95 percent. A few might have a little bit of a problem because they already have some problems in the eyes. So, it's definitely surgical. And I hear people talk about lasers and stuff, but the laser is done in a different way, but cataract really is surgical removal.

MS. DIANA CAMPBELL: Right. Great. We're going to pivot to the study. In the study that you and your team did a few years ago, you were evaluating if there was a higher risk of developing late AMD after having cataract

surgery. Could you walk us through the basics of the study and the results that you and your team found?

DR. EMILY CHEW: Sure, I'd be happy to talk about that. You know, we were interested in looking at that question, and the question is: If you have macular degeneration, what happens if you take your cataract out? Does it make your macular degeneration worse? That's a question we ask all the time. Macular degeneration causes half of the blindness in the United States, so it's very common, and cataracts are also very common. They're both diseases of people who are aging, and they're both a process of aging. But does one make it worse? And especially the fact that when you do cataract surgery, you may cause what we call inflammation in the eye. Then will it increase the risk of macular degeneration progressing? And a few studies in the past have suggested that, and some of the doctors have said, "Oh, this is so bad. I don't think you should do cataract surgery on anybody with macular degeneration." And we actually looked at that question probably about 15 years ago in our first study, AREDS, and we found no harmful effect. And this is important because people with macular degeneration have compromised vision already. If you can improve them in any way, that can be a big bonus for them in any way. So, we were very concerned that this may or may not be true again.

So, we took this study from our Age-Related Eye Disease Study 2, AREDS2, where we followed patients for 10 years, so it's a long time. A lot of cataracts happened over that period of time, like over 1,000 cataracts happened. And these are people who are at risk for macular degeneration, so it's the perfect place to study them. And we also take good visual acuities. We do visual acuities that are measured, so you know exactly what they're seeing. We know exactly what happens with their macular degeneration, so we can tie the two together and see if there's any correlation. We took the study from baseline all the way to 10 years, and we found that patients even though they had macular degeneration and did have cataract surgery done, and guess what? It didn't increase their risk of macular degeneration. We did it in three different ways. We looked at matching people with disease and with surgery and the other not having surgery, matching pairs, and we found nothing there. We did two other different statistical methodology and, again, we found nothing.

And so, what we found was that their visual acuity, even though they had macular degeneration that was pretty far on, they still actually improve in their visual acuity. I think part of it now is people, especially with macular degeneration of the wet type, we have good treatments where we do injections of anti-VEGF therapies, such as Lucentis®, Eylea®, and many others, Avastin®, any more long-term, longer follow-up and also delays in delivering it. And that's what's really reduced the risk of vision loss. We found that it didn't increase the risk of macular degeneration, but these patients are at risk for macular degeneration. If you have macular degeneration, your risk of progressing is always there, no matter what you do with the cataract.

So, the message is: If you had cataract surgery and you've done well, most times your macular degeneration is taken care of by another doctor. Be sure to have that eye checked out for any progression of disease because a lot of times you can actually treat it. We now have great treatment for wet form, and there's some treatment for the dry form, as well. But the difference is the fact that we actually can really help patients after they've had cataract surgery, despite the fact they have macular degeneration. So, we felt pretty good about this, and there were a number of other studies that were looking at this. And interestingly, the first studies, which were studies looking at people living in one place—like Beaver Dam or people in Wisconsin, for example; some living in Australia, called the Blue Mountains Eye Study; people living in Rotterdam. All over the world, people have looked at this question, and when you look at way back when if there should be a risk, the risk might be because cataract surgery has evolved to be much safer, much less traumatic than it was before, and maybe that's why we're getting better vision. And they're now putting intraocular lens, those little implants that you put in. Instead of having to wear glasses, they insert a lens inside the eye, and those lenses are somewhat protective, and maybe that's been helpful, as well.

And of course, our population in our study are patients who are in the clinical trial, and those usually are normal volunteers who—normal in the fact that they have macular degeneration, of course—but they tend to be more health conscious, maybe this is a little bit biased in that point of view, but I don't think so. I think that we really showed that the risk

of macular degeneration is markedly delayed and certainly, if you have cataract and that needs to be done, I would not hesitate to get it done. And remember to go back to your doctor and say, "I just had cataract surgery, please make sure my macular degeneration hasn't progressed. And if it has, can we do some treatment?" I think that's the story. I think it's good news for people with macular degeneration and cataract, because I think visual acuity in the end was actually very good.

MS. DIANA CAMPBELL: I think that's such a comfort. Those are outstanding results and great news. I've talked to so many people over the past 10 or 15 years who have already had the onset of macular degeneration, and they have their quote/unquote "good eye." And so, they've got one eye in treatment and one that the vision is still relatively good, and they look to do anything to preserve their good eye and that vision in their good eye. And so, I think the results that you're describing, I think, are a huge comfort. And I want to reiterate and echo the suggestion that you brought up to mention to your retina doctor if you are in treatment, because they likely are not the ones who are performing the surgery. So, closing that loop and making sure that all of your doctors have the best information possible in executing your treatment plan is really important, as well. Let's see. If somebody already has macular degeneration and is receiving treatment—and these are questions that are coming from the audience—can they still have cataract surgery, and how does that impact their AMD treatment? You kind of alluded to this in, I think, closing the loop with the doctor. Is there anything you'd like to add to answer that question?

DR. EMILY CHEW: No, I don't think doctors are hesitant, even though you're in treatment and that you have a cataract. I think the doctor who's doing the injections and your retina doctor would be very grateful to have that cataract out so he can see your eye better, and they can still continue on with the treatment before and after cataract surgery. That doesn't interrupt it in any way, and in some ways, having that injection, they actually help your retina. That's really actually really important to do. I think, again, what Diana said is really key, that you're the key coordinator of this making sure that the doctors know what's happening with the doctors themselves. And often they do communicate with each other,

but it's best time for you to make sure that they know what's going on. And clearly, the retina doctor will not object to it, and they would be very grateful, again, to have that cataract out, probably, just to make sure they can see well enough.

MS. DIANA CAMPBELL: Absolutely. We hear a lot of discussion ... in addition to this BrightFocus Chat, we run a program called Macular Degeneration Community Circle. And it's essentially a support group, but more than that, it's an opportunity for the participants to share stories with one another and their experiences both with the doctor, but also in managing the rest of life, lighting, social interaction, and connection. And one of the big topics that always comes up is the type of cataract removal, whether it's surgical or laser, and I believe that only one of them is covered by Medicare. So, aside from that barrier, is there a removal method that's preferable, or is surgical removal and laser relatively similar? Do you have thoughts on that one?

DR. EMILY CHEW: I think the key to remember is the cataract itself won't come out with a laser. You could do a laser to open up the capsule, and that's important. So, no matter what, you end up opening up your eye and removing [the cataract] with or without that laser. The laser, I think it costs a little bit more, and then there's another laser that comes on after that. So, it gets a little confusing, but the laser makes it a perfect circle so you can then remove everything out. So, with or without that, it's really something you have to discuss with your doctor. Sometimes it's cost-involved, etc., but there's really no study suggesting one's way better than the other. My father's had cataract surgery, and my brother's a cataract surgeon, and he doesn't always use the laser at all. In fact, he just uses sort of a hand-held one. But what happens after that is they remove the cataract, but they leave a little bag behind—it's called a posterior capsule. What happens with that is that about two out of five people will actually get an opacification in that, and then you would get what people call a "second cataract," when your vision actually decreases again. And in that case, go to your doctor, and the doctor who does a cataract would be able to open it up with a laser a few spots that opens up and improves your vision. So, the laser's done in multiple ways, and there are different types of lasers, of course, but for the lay public, they don't know the

differences between them, and they have different purposes. But that's where the whole idea of laser versus surgery, and then laser again after the cataract surgery is done. Does that make sense, Diana?

MS. DIANA CAMPBELL: It does. And I'm just as you're talking, I'm thinking we have so many discussions about treatments and injections and all of that. And I think the thing that we, or the idea or concept that we usually come around to collectively in settings of patients and internally, as well, is: Not only is every person different, but every eye is different. So, it's, again, going back to that conversation with your cataract surgeon and narrowing what the best approach is. Specifically, for you and your eye that's being operated on.

DR. EMILY CHEW: Well, you mentioned the support group, which I think is really important. We want to listen to our patients and hear what they have to say, because what they say is really important, as well, and I think it's important for them to hear each other's stories, as well. I mean, there's that real art and actually a science where we actually talk about patient-reported outcomes. We ask the patient how well did they do, what can they do, what function they have, what can they do. And those are things that, I think, make you understand, yeah, indeed, that really helped me or it did not help me. So, we can do only certain things, but functionally, I think the important thing is talking to your patient more than anything else.

MS. DIANA CAMPBELL: Absolutely. And I think in forums like the Community Circle, it's a sharing of information, but it also builds a sense of empowerment. And if there's someone that is a little bit further down the road and they figured out all the right questions to ask and had a great experience—whether it's an AMD treatment or cataract surgery—if they're able to share that process and the questions that they ask their doctor and give that confidence to others to know, to a certain extent, their health care is in their hands, and the questions that they have are valid and worth answering when they're in that appointment with their doctor. So, it really is a wonderful group. Okay, so switching gears. Regarding the new lens that is implanted, we have people asking different questions about that cataract lens that is inserted during surgery. Is there one that's better than

others for those with macular degeneration?

DR. EMILY CHEW: Well, I don't think we've ever done a study looking at that, and I know that my friends who do cataract surgeries often say, "Just the plain old ones do better for their macular degeneration patients because they don't really need a lot." But I think that depends on your vision. I think, again, it's very personal, it depends on what your vision is. You have to talk to your doctor. There's all these multifocal lenses that you don't have to wear glasses to read and stuff. So, it depends on your function and where you're at. I think that's a really important question to talk to your own doctor about, and then obviously, there's also cost involved, and actually the different lenses cost differently. But just a plain old basic lens seems to work well, as well. So, that's the only advice I have, and I don't do cataract surgery. And in at least the patients I've seen, more severe ones tend to just go for the basic, and they seem to do quite well, so they do well with all the choices they do. I think cataract surgery is quite an art, and the surgeons have a lot of control over that, and they can explain a lot more about what may or may not be good for your eye.

MS. DIANA CAMPBELL: Sure. Sure, that makes sense. Okay, I'm going to switch over. We have collected questions over the past couple of weeks while we were doing the registration, so I'm just going to kind of run through these questions at this point. One listener was told that she has a PSC cataract in her eye that was caused by anti-VEGF injections and was wondering: Will it return after the surgery if they continue the injection? Does that make sense?

DR. EMILY CHEW: Yeah, well, I wish you wouldn't have to worry about the cataract developing at all. And it's sort of unusual to think that the anti-VEGF therapy caused it, unless it really the needle actually penetrated that eye, because that can happen. To even the best of physicians, that can happen. And that doesn't mean that they can remove the lens. But it's unlikely it will come back again. I think it should be pretty safe that the patient should maintain good vision with the cataract and as well as the macular degeneration being treated well.

MS. DIANA CAMPBELL: Yeah, and not to mention if they were to cease the injection-based treatments, their macular degeneration would likely

get worse, as well.

DR. EMILY CHEW: Exactly. That part's a given, unfortunately. We just can't have anything different, and those treatments are valuable, and they've helped a lot of patients though.

MS. DIANA CAMPBELL: There was just a question about if supplements have any impact on cataracts or not. Or are there any specific supplements that might help mediate the effect of cataracts?

DR. EMILY CHEW: Well, our study from AREDS, the very beginning in 1992 when we did that study, there were a lot of studies being done in cataract looking at vitamins. And the vitamins were being done for heart disease and cancer. And when we started AREDS, we said, "Well, we'd like to do some vitamins to see if those affect the eye in any way." We all guessed and thought that the cataract would be really helped by the supplements. And lo and behold, it did not get help at all with the supplements in terms of the AREDS1. In AREDS2, which is a different study where everybody is given the AREDS supplement, but people were given either lutein or omega-3 fatty acids. Lutein is something that's found in green, leafy vegetables, you know, kale, collard greens, spinach. What happens with that was that if you look at people who don't eat any greens—like, they never eat spinach, they never eat anything green—the lutein was somewhat helpful with their cataract. So, it might have a small effect in people whose diet is very, very poor. But if your diet's pretty good, you don't need anything at all.

And the other supplement data showed no effect at all with supplements. So, we generally don't give supplements for cataracts, but the advice is to eat well. These days, you've probably heard the phrase, "Food is medicine." That really is true and is really important. We know that the diet is important for macular degeneration, and so I think it's really, really important to think about that. After our first study, we found out these green leafy vegetables are important, eating fish twice a week is very important. So, instead of a supplement, that those two things are really important for your eyes in general for macular degeneration. And probably if you don't eat enough lutein, I think cataract could be an issue. So, the long-winded answer is that supplements probably aren't that

helpful, but lutein may be helpful for those who have a very poor diet. But instead of a poor diet, eat a good diet. That's good for your general health, for your cancer risk, for your heart risk. Cardiologists suggest you eat fish twice a week. So, those are all, I think, important aspects that we have to remember, that we are what we eat.

MS. DIANA CAMPBELL: That's a wonderful reminder. And I'm not sure if this has been studied, but I will ask this as my last question in case, and if it hasn't been studied, that's fine. Does cataract surgery affect wet and dry AMD differently? Are there unique concerns or considerations that one that has wet AMD might take into account versus dry AMD or geographic atrophy?

DR. EMILY CHEW: When we looked at our study, we looked for either wet or dry, and it didn't have any discrimination to either one, and we didn't have any increased risk, so we don't think so. There was one study that had only seven cases of dry AMD that went to geographic atrophy, but the numbers were so small, it's hard to tell that. I think one of the nicest studies that's been done is one done in Australia, where they followed patients with one eye that had cataract surgery, and the other eye did not. And they found really no difference, again, cataract surgery did not increase your risk of macular degeneration, and there wasn't any difference between wet or dry. So, I don't think that's an issue that you have to worry about.

MS. DIANA CAMPBELL: Thank you. And thank you for sharing so much helpful information with us today. This was really wonderful, and there're just so many questions that we get all the time, and so I know that what you've shared today is of comfort and definitely of use for the patients that we work with that will be talking with their doctors as they consider surgery. To our listeners, I hope you found today's Chat helpful. Our next Macular Chat will be held on Wednesday, April 24, and the topic is Resources to Help You Live Well With AMD. Dr. Chew, before we conclude, are there any final remarks that you'd like to share with our audience today?

DR. EMILY CHEW: No, I really don't have any more other than live well, and I want to thank you for having me, and I'd like to thank BrightFocus

for all the support you give to all the research that's so crucial for so many people. That really helps all our patients with macular degeneration and other diseases that you support. So, thank you very much, Diana.

MS. DIANA CAMPBELL: Oh, thank you. We appreciate that very much. So, thank you again to Dr. Chew and to our listeners for joining us today. This concludes the BrightFocus Macular Chat. Have a wonderful month.

Useful Resources and Key Terms

To access the resources below, please contact BrightFocus Foundation: (800) 437-2423 or visit us at www.BrightFocus.org. Available resources include—

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- [Apps for People with Low Vision](#)
- [BrightFocus Foundation Live Chats and Chat Archive](#)
- [*Clinical Trials: Your Questions Answered*](#)
- [*Healthy Living and Macular Degeneration: Tips to Protect Your Sight*](#)
- [*Understanding Macular Degeneration*](#)
- [Research funded by BrightFocus Foundation](#)
- [*Safety and the Older Driver*](#)
- [*The Top Five Questions to Ask Your Eye Doctor*](#)
- [*Treatments for Age-Related Macular Degeneration*](#)
- [Understanding Your Disease: Quick Facts About Age-Related Macular Degeneration \(AMD\)](#)
- [Cataract Surgery and Age-Related Macular Degeneration](#)

Other resources mentioned during the Chat include—

- posterior subcapsular cataract
- Avastin®
- Lucentis®
- Eylea®
- AREDS1 and AREDS2 studies
- lutein