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### Saving Sight: What You Might Be Missing in Your Patients with Diabetes

Announcer:

Welcome to CME on ReachMD. This activity is part of a special series titled "The Mission Continues: Saving Sight Through Early Referral, Diagnosis and Treatment for DR/DME." and is provided in partnership with the National Eye Institute of the National Institutes of Health, of the U.S. Department of Health and Human Services, along with Prova Education. It's supported by an independent educational grant from Regeneron Pharmaceuticals. To view this activity or others in the series, please visit [EyeHealthAcademy.org/SaveSight](http://EyeHealthAcademy.org/SaveSight)

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Dr. Weinstock:

We are well aware of the increasing prevalence of diabetes in the United States. This also means that more and more individuals are at risk for losing vision due to diabetic retinopathy. New data are increasing our understanding of this disease. Are you keeping up with the latest information and what it means to our patients?

This is CME on ReachMD. I'm Dr. Ruth Weinstock, and joining me for today's discussion are Dr. Susan Bressler and Dr. Mark Dunbar. Welcome to the program.

Dr. Bressler:

Well, good morning, and I'm really excited to join both of you today.

Dr. Dunbar:

Thank you, it's great to be here.

Dr. Weinstock:

We recommend that patients with diabetes undergo a dilated eye exam once a year at a minimum. Susan, you and Mark are both eye doctors, but you're an ophthalmologist, specifically a retina specialist, and Mark is an optometrist. Can you please clarify for us when patients should be referred to you?

Dr. Bressler:

Sure. The goal for any eye care provider is to be able to appropriately counsel our patients on what they have and what their risks are of their disease progressing and, of course, to be in a position to detect what abnormalities they have and recognize when there's vision impairment or retinal abnormalities of diabetic retinopathy and when, of course, appropriate treatment should be initiated. So a retina specialist is essentially a medical doctor – somebody who's completed medical school and then invests 5 to 6 years of postgraduate training studying all forms of eye disease. Patients with diabetes are at risk of diabetic retinopathy, but they're also at risk for other eye problems, namely cataract or glaucoma. So the ophthalmologist is educated in the breadth of eye disorders and in a position to be able to identify and treat appropriately any eye condition the person would have. The retina specialist also has extensive training in the retinal imaging that we use frequently to detect and confirm and monitor the progress of the retinal manifestations that we see associated with diabetic eye disease, and we have the experience and knowledge to provide the direct medical or surgical care that

might be necessary to manage those features.

But I'll turn it over to Mark now so he can give you the optometrist perspective.

Dr. Dunbar:

Optometrists are also trained in the diagnosis and detection of diabetic retinopathy and, of course, understanding the mechanisms of diabetes and how diabetic retinopathy develops. Most optometrists feel comfortable managing patients with mild and moderate disease simply because the risk of going on to develop proliferative disease or vision-threatening diabetic retinopathy is fairly low. Once they reach a level beyond moderate, I think most optometrists will refer those patients to a retinal specialist, again, because the risk of going on to develop proliferative disease or vision-threatening diabetic retinopathy increases. We also know that diabetic macular edema [DME] can occur at any level of diabetic retinopathy, even mild disease, so again, optometrists, I think, are pretty good, especially with some of the latest technology, like OCT [optical coherence tomography] devices, which I think has improved the sensitivity of recognizing and diagnosing diabetic macular edema.

So again, I think optometrists feel good about mild-moderate disease, following these patients in their practices. More than moderate, those patients typically get referred to a retinal specialist, as well as patients who have diabetic macular edema.

Dr. Weinstock:

Thank you for clarifying those issues. The next question refers to imaging. Imaging is an important part of following people with diabetes. Some offices have a fundus camera, and images are sent to a remote reading center where they're read by an ophthalmologist.

Mark, is this type of imaging sufficient for most patients?

Dr. Dunbar:

Well, I think we've seen really tremendous advancements in imaging technology, and remote imaging is certainly going to be in the forefront. Ideally, you know, all patients with diabetes would come to an eye care provider, but I think we recognize that doesn't always happen, right? Many patients either don't recognize the need or many things are going on in their life. They feel like they're seeing well, and that doesn't happen. So I can really see remote imaging, you know, in an office of an endocrinologist or primary care physician, where an image gets captured and it's sent to a reading center, and again, that would go a long way towards detecting patients who have retinopathy or even sight-threatening retinopathy.

Or even, gosh, in a CVS or a Walmart or walking through a mall, a remote imaging device that could really kind of capture these images for patients who aren't getting into an eye care provider. I think we're not quite there yet. I think rapidly we're getting there, and that technology continues to improve. As it is, many optometrists have wide-field imaging devices that, again, do a great job of capturing diabetic retinopathy, and again, I think it helps us do a better job of categorizing what level of diabetic retinopathy a patient has. Many of them, of course, ODs have OCT devices. Again, that increases the sensitivity of detecting diabetic macular edema.

We've created a 3D animation that helps us understand the changes that occur in patients who have diabetes and diabetic macular edema. Let's take a look.

[ANIMATION PLAYS]

Announcer:

Patients with diabetes are at risk for developing diabetic retinopathy.

Over time, increased blood sugar leads to weakening of capillary walls resulting in microaneurysms.

As time goes on, the retina can swell and blood vessels can leak.

Ischemia can also develop where large areas of the capillary network are lost. In response, new blood vessels grow, but these vessels are also prone to leaking and bleeding. Additionally, scar tissue can form which can cause the retina to detach.

During many phases of diabetic retinopathy patients may not have any symptoms and may not be aware these changes are occurring.

Help your patients improve their chances of maintaining good vision with regular eye exams and appropriate treatment with anti-VEGF therapy, laser, and/or surgery before diabetic retinopathy causes permanent vision loss.

Dr. Weinstock:

For those just tuning in, this is CME on ReachMD. I'm Dr. Ruth Weinstock, and today I'm speaking with Dr. Susan Bressler and Dr. Mark Dunbar about the latest data and strategies for managing the eye health of our patients with diabetes.

There are new data from studies evaluating anti-VEGF [vascular endothelial growth factor] treatment earlier in the diabetic retinopathy disease course. Susan, can you tell us about those studies?

Dr. Bressler:

Sure thing, Dr. Weinstock. First, I think it's important to start with why do patients with diabetic retinopathy lose vision? Well, they do so from either diabetic macular edema or proliferative retinopathy or sometimes a combination of the two. Now diabetic macular edema, we'll talk about that first, affects central vision. But at its most severe, it can lead to legal blindness. But since 2010, we deliver repeat intravitreal injections of a biologic agent – an antibody – that is against vascular endothelial growth factor. This is supereffective at controlling this condition. Once we appropriately initiate treatment, fewer than 15% of patients continue to experience vision loss, and 50% can experience significant vision recovery.

However, the level of presenting acuity will definitely affect the final vision outcome that we can achieve. So for example, if we're monitoring somebody, and they have only mild vision impairment and we start anti-VEGF therapy, then 2 years later, we can maintain excellent reading and driving vision – 20/40 or better – in 95% of those people. Whereas, if a patient doesn't present to us until they have a greater degree of vision impairment, then despite our providing the therapy and despite the fact that many will have some degree of vision improvement, only three-quarters will maintain that 20/40 or better vision.

So in an ideal world, we're monitoring patients so that when they develop center edema, when they first experience that earliest impairment of vision, we're poised to start the therapy to maintain the best level of vision in the greatest number of patients.

Now I'm going to turn to proliferative retinopathy. Proliferative retinopathy results from the liberation, again, of vascular endothelial growth factor throughout the intraocular compartments, and that leads to the development of blood vessels growing on the optic nerve, elsewhere in the retina, and this can lead to absolute blindness. We're talking nonambulatory vision. Well, we have treatments for that, too. Panretinal photocoagulation – PRP, laser treatment – it's been the mainstay of what we've done for decades. But we also can use anti-VEGF therapy to limit blinding complications of proliferative retinopathy.

So what's new? What are you really alluding to about early treatment? Well, since anti-VEGF has been available to us for the last 10-plus years, we simultaneously recognized that it was turning back the clock, that a great number of patients treated with anti-VEGF therapy had improvement in the severity of their diabetic retinopathy. So the question became: Could we slow that down or stop it, thereby preventing proliferative disease, preventing macular edema, and saving more vision in a greater number of people? So 2 prospective, randomized clinical trials have tried to address this question. One is Protocol W of the DRCR [Diabetic Retinopathy Clinical Research] network. The other is the PANORAMA study. Both studies clearly demonstrated that, delivered in a preventative format, anti-VEGF therapy can improve the severity of nonproliferative retinopathy through 2 years and reduce the number of patients who develop these vision-threatening complications – proliferative retinopathy or diabetic macular edema. However, despite these excellent anatomic outcomes through 2 years, this has not translated into a superior level of vision for individuals managed prophylactically, as compared to those that are observed with intervention only if and when DME or proliferative retinopathy develops.

So fortunately, Protocol W is ongoing and will continue to follow patients through 4 years, and so we'll have an opportunity to learn whether these early, very favorable anatomic benefits can be maintained on an as-needed anti-VEGF regimen and whether in time longer-term vision outcomes may manifest superiority with prevention treatment. So the jury is still out. Right now, is the information helpful to me? It is, because there are certain situations where I might more strongly advocate preventative treatment.

Dr. Weinstock:

Thank you for those insights. For those who are interested in learning more about the details of these studies, please visit [EyeHealthAcademy.org/SaveSight](https://EyeHealthAcademy.org/SaveSight).

Since early detection is key to early treatment of diabetic retinopathy, we have to keep our patients engaged. But our patients are busy. They're working, caring for families, and juggling multiple doctors' appointments. I tell my patients that diabetic eye disease can be silent, meaning that there may be no symptoms or changes in vision, so the only way to detect diabetic retinopathy in time for early treatment to preserve vision is to have regular eye examinations.

Mark, what are your strategies to encourage patients to follow up with eye examinations?

Dr. Dunbar:

I think it all starts with education – making sure patients understand the reason why they're in my chair, what the goal of our eye exam is, that when we dilate a pupil, we're going to look to see if there's any leaking or bleeding in the retina, letting patients understand that that is a possible consequence down the road of having diabetes. And I know that the endocrinologist/primary care physician also talks about this, so I think patients probably need to hear it over and over again. We use fundus imaging and OCT technology also to capture a picture or an image, and I think that personalizes the eye care for the patients so they understand what it is we're looking at. And

when we start to see diabetic retinopathy, they can see that it's happening in their eye. I think that goes a long way for patients understanding the disease and why they're coming in to the eye care provider. We're starting to see some direct-to-consumer messaging. I think that's going to help because, again, we know that not all patients come to an eye care provider. So I think any modality that we can adopt to help patients understand diabetic eye disease and the need to come in to see an eye care provider is important.

Dr. Weinstock:

Susan, how do you encourage patients to keep coming back for monitoring and treatment, if necessary?

Dr. Bressler:

Sure. Well, certainly I want to echo most of the sentiments that were just expressed by Dr. Dunbar. A picture is worth a thousand words, as you've just heard. We use these beautiful images of the retina – color photographs or OCT, which beautifully illustrate thickening, swelling of the retina. We practice with large monitors in our room, and we show patients those pictures. They see where they are now. We bring up old pictures for comparison, and when they see the evolution of their disease in response to treatment or better systemic care or when they see worsening of their disease, when they're being monitored and perhaps not taking care of themselves, it can be extremely motivating. And, as Mark said, we use every encounter to keep the patient engaged in their systemic well-being, stressing the importance of glycemic control, blood pressure control, lipid levels, continuing care with the rest of the healthcare practitioners, and reminding them that only when they see the eye care provider can the proper exam techniques and imagery be done to evaluate their eye care status.

Dr. Weinstock:

Thank you. As we wrap up here, I'd like to ask each of you to share your key take-home messages for our audience. Susan, let's start with you.

Dr. Bressler:

Sure. It's been phenomenal how anti-VEGF therapy has revolutionized the care of patients with diabetic retinopathy. If we apply this in appropriate and repeat intervals, we can greatly limit vision impairment and blindness as a result of diabetic retinopathy. Given that, I think it behooves us to turn our attention to how we best provide access to care for all patients who are treatment candidates so that in the long run, we can continue to improve the quality of life of our patients with diabetes.

Dr. Weinstock:

Mark?

Dr. Dunbar:

Well, I would say that it takes a village to care for a patient with diabetes. I see optometry is really the middle, right? You have the endocrinologist/primary care physician on one end, and so the optometrist echoes the sentiments, as Dr. Bressler just alluded to – controlling blood sugar, controlling blood pressure, talking to them, educating them about the need of exercise and eating right, and obviously, detecting diabetic retinopathy and educating patients. And then, if they reach a level that may be visual-threatening, then on the other end, making sure patients are seen by a retinal specialist at appropriate time. And again, we see too often patients falling through the cracks, and I think, you know, the goal of programs like these, and direct-to-consumer programs, is to really educate our patients and help them understand the importance of healthcare, eye care, and the journey of a patient with diabetes.

Dr. Weinstock:

Thank you. And I would say my take-home message is the same. It's so important for people with diabetes to understand the importance of having regular eye examinations so that early vision-saving treatment can be initiated when needed. And as an endocrinologist, I certainly see every day how important it is for people with diabetes to work with their diabetes care providers to best as they can manage their blood sugar levels, their blood pressure levels, cholesterol levels, to get help to stop smoking if they're a smoker to prevent damage to the eyes and also to prevent damage to other organs.

So, Susan and Mark, thank you so much for joining me today for our discussion about diabetic retinopathy. It was great to have you both.

Dr. Dunbar:

Thank you for having us.

Dr. Bressler:

Yes, it was a pleasure, and always happy to spread the word about what effective care can accomplish.

Dr. Weinstock:

Thank you.

Announcer:

Thank you for listening! This activity is part of a special series titled “The Mission Continues: Saving Sight Through Early Referral, Diagnosis and Treatment for DR/DME.” and is provided in partnership with the National Eye Institute of the National Institutes of Health, of the U.S. Department of Health and Human Services, along with Prova Education. It’s supported by an independent educational grant from Regeneron Pharmaceuticals. To view this activity or others in the series, please visit [EyeHealthAcademy.org/SaveSight](https://EyeHealthAcademy.org/SaveSight)