

The Importance of Early Detection in Diabetic Macular Edema (DME)

Detecting DME in its early stages is important in the fight against vision loss and possible blindness.¹ Knowing the risk factors associated with DME can help you identify which patients should be referred to their optometrist, general ophthalmologist, or retina specialist.



General ophthalmologists and retina specialists are important resources to help a patient manage DME. They are trained to diagnose and treat retinal conditions like DME.²

Who's At Risk for DME?

Twenty-nine million people in the United States have diabetes.³ Diabetes is the leading cause of blindness among adults 20 to 74 years old.⁴ Between 2005 and 2008, in people 40 years or older with diabetes, 28% had diabetic eye disease.³

DME is a complication of diabetic retinopathy (DR). DR—the most common eye condition caused by diabetes—can happen when there is too much sugar (glucose) in the blood, which damages and blocks the blood vessels in the retina, preventing the retina from getting a supply of blood and nutrients.^{5,6} The damaged blood vessels can also leak fluid into the part of the retina responsible for sharp central vision (the macula), which results in DME.⁵ Any patient with diabetes can get DME, but the longer a patient has diabetes, the greater their risk of developing the disease—especially if blood sugar levels are not controlled.⁷

Other risk factors for worsening DR include:

- **Hypertension.** A major clinical trial showed that controlling blood pressure can reduce the risk of DR progression. High blood pressure damages blood vessels, increasing the risk for eye complications. Target blood pressure for most people with diabetes is less than 130/80 mm Hg⁷
- **Elevated blood lipid levels (cholesterol and triglycerides).** Elevated blood lipid levels can lead to greater accumulation of exudates, which are protein deposits that leak into the retina⁷
- **Ethnicity.** Although anyone with diabetes can get DR, certain ethnic groups are at higher risk because they are also at higher risk for diabetes. These include African Americans, Latinos, and Native Americans⁷
- **Other diabetes complications.** Diabetic neuropathy, severe DR, diabetes duration, pregnancy, anemia, certain diabetes medications, and sleep apnea are possible contributing risk factors⁸
- **Cigarette smoking.** Smoking puts patients at risk for many conditions and can seriously compromise general health⁸

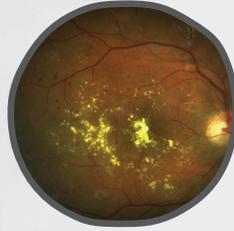
The American Diabetes Association recommends that if a person has diabetes, he or she should get a comprehensive dilated eye exam at least once a year.⁹

Five Tests Given When Diabetic Macular Edema (DME) is Suspected

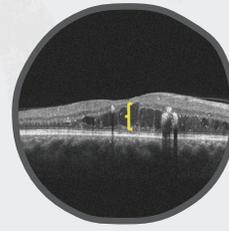
Early diagnosis and treatment are important. If not treated, DME can cause vision problems and even vision loss. Eye doctors have different tests for diagnosing DME. Some commonly used tests are⁶:

1 Dilated eye exam:

A doctor puts drops in the patient's eye to dilate the pupil. The doctor can then see into the back of the eye (including the retina) for signs of problems.⁶



3 **Fundus photography:** Shows the inside of the back of the eye.¹¹



4 **Optical coherence tomography:** Imaging is used to show the layers and thickness of the retina.¹¹



5 **Fluorescein angiography:** A dye injected into the patient's arm passes through his or her blood vessels to show the blood vessels in the back of the eye.⁶

2 **Visual acuity test:** Measures how well a patient can see the letters on an eye chart from a distance.⁶ This test is not as accurate as other tests for determining eye complications.¹⁰

Treatment Options Are Available

Once diagnosed, DME can be treated by:

Anti-VEGF Drugs. Anti-VEGF drugs bind to vascular endothelial growth factor (VEGF, a naturally occurring protein in the body), which can keep blood vessels in the eye from becoming leaky. Anti-VEGF drugs are administered by injection in the eye.¹²

Laser. Laser photocoagulation, a treatment that has been used for some time to treat DME, uses a beam of light to seal off or destroy leaking vessels.¹²

Steroids. Steroids can reduce swelling and inflammation in the retina. Steroids are also delivered by injection in the eye.¹

Encourage your patients with DME to speak to their retina specialist or general ophthalmologist about the pros and cons of all 3 treatment options.

References: 1. The Angiogenesis Foundation. Advocating for improved treatment and outcomes for diabetic macular edema: a report based on an international expert summit convened in Paris, June 2014. <https://www.angio.org/wp-content/uploads/2014/02/DME-Intl-Summit-White-Paper-Report.pdf>. Accessed January 28, 2015. 2. American Academy of Ophthalmology. Seven reasons to refer to a retina specialist. <http://www.aao.org/young-ophthalmologists/yo-info/article/seven-reasons-to-refer-to-retina-specialist>. Accessed March 26, 2015. 3. Centers for Disease Control and Prevention. National diabetes statistics report, 2014. <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>. Accessed May 20, 2015. 4. Centers for Disease Control and Prevention. 2011 National diabetes fact sheet. <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>. Accessed February 26, 2015. 5. American Diabetes Association. Eye complications. <http://www.diabetes.org/living-with-diabetes/complications/eye-complications/>. Accessed May 19, 2015. 6. National Institutes of Health. National Eye Institute. Facts about diabetic eye disease. <http://www.nei.nih.gov/health/diabetic/retinopathy.asp>. Accessed February 26, 2015. 7. American Academy of Ophthalmology. Who is at risk for diabetic retinopathy? <http://www.geteyesmart.org/eyesmart/diseases/diabetic-retinopathy/risk.cfm>. Accessed February 26, 2015. 8. The Angiogenesis Foundation. Science of DME. <http://www.scienceofdme.org/learn/>. Accessed July 27, 2015. 9. American Diabetes Association. Eye care. <http://www.diabetes.org/living-with-diabetes/complications/eye-complications/eye-care.html>. Accessed June 10, 2015. 10. American Optometric Association. Visual acuity: what is 20/20 vision? <http://www.aoa.org/patients-and-public/eye-and-vision-problems/glossary-of-eye-and-vision-conditions/visual-acuity?ss=y>. Accessed March 26, 2015. 11. American Society of Retina Specialists. Diabetic retinopathy. <http://www.asrs.org/patients/retinal-diseases/3/diabetic-retinopathy>. Accessed July 27, 2015. 12. American Academy of Ophthalmology. Diabetic retinopathy treatment. <http://www.geteyesmart.org/eyesmart/diseases/diabetic-retinopathy/treatment.cfm>. Accessed July 27, 2015.

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US-PMA-1073