

LOOK ^{TO} YOUR FUTURE

Diabetic Eye Disease and You



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REGENERON

Introduction



Diabetes is the leading cause of new cases of blindness in people 20 to 74 years of age in the United States.¹

Diabetic Retinopathy (DR) is the most common eye problem caused by diabetes.² Diabetic Macular Edema (DME) can result from DR.² Both are serious conditions that can cause vision problems.²



DR is the most common cause of permanent blindness in working-age Americans.³

If you have diabetes, get a dilated eye exam at least once a year²

DR and DME may

- Blur central vision (what you see straight ahead)²⁻⁴
- Cause blind spots or patches^{2,4}
- Cause central vision to be wavy³
- Make colors appear dull or washed out^{3,4}
- Affect your ability to²
 - Read
 - Write
 - Drive
 - Watch TV
 - Recognize faces

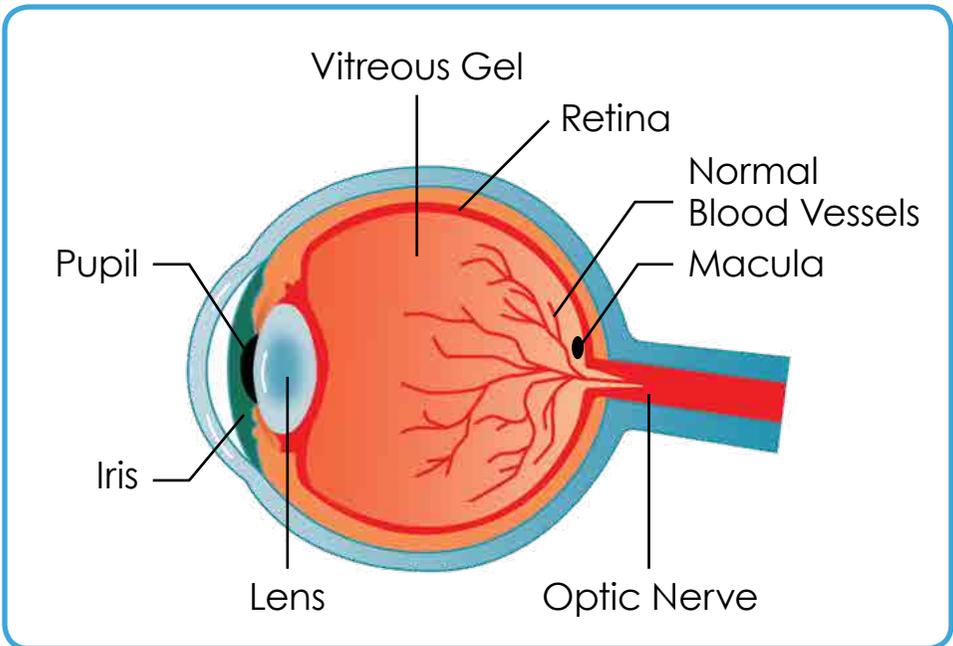
Visit [LookToYourFuture.com](https://www.LookToYourFuture.com) to learn more about managing your eye health.

DR and DME Impact on the Eye

What are the retina and the macula?

DR affects the retina. The retina is a layer of tissue at the back of the eye.² This layer has light-sensitive cells that send signals to the brain.² These signals form the images you see.²

DME affects the macula, the central part of the retina that allows you to see fine detail.³



The macula is the part of the retina responsible for your central vision.³

Risk Factors

What are the risk factors for DR and DME?

Your risk of getting DR and DME is higher the longer you have diabetes.² Your risk is also higher if your blood sugar levels are not under control.²

Other risk factors include:



Race

Your risk is **higher** if you are African American³



Smoking

Your risk is **higher** if you smoke⁵



Blood A1C

Your risk is **higher** if your blood A1C levels are not within target range⁴



Blood Cholesterol

Your risk is **higher** if your blood cholesterol is not controlled²



Blood Pressure

Your risk is **higher** if your blood pressure is not controlled²

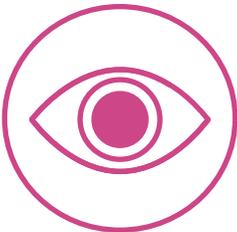
Discuss with your eye doctor if you have any of these risk factors.

DR

What is DR?²

Nearly 1 in 2 Americans with diabetes has DR. Only about half of them are aware of it as there may be no symptoms.

DR occurs when too much blood sugar from diabetes damages the blood vessels of the retina. These blood vessels can bulge, weaken, and leak blood into the retina.



Early detection and treatment of DR can **reduce the risk of blindness by**

↓ 95%

What are the symptoms of DR?

DR may have no symptoms in its early stages.² When symptoms do occur, they may affect one or both eyes.⁴ Symptoms may include:



Blurriness in the center of vision^{2,4}



Blind spots or patches^{2,4}



Shadow across field of vision⁴



Colors appearing dull or washed out⁴



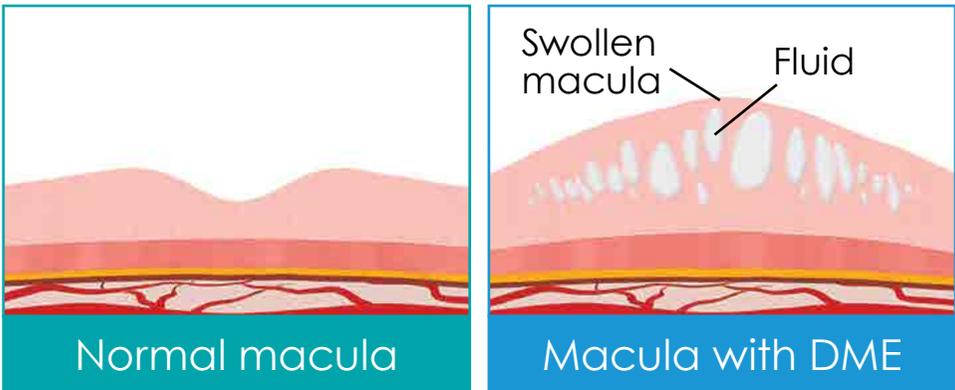
Eye pain or pressure⁴

DME

What is DME?^{2,3}

DME is the most common cause of vision loss among people with DR.

DME occurs when damaged blood vessels from DR leak fluid into the retina and cause swelling of the macula, which affects vision.



Visit LookToYourFuture.com—your online resource to learn more about DME and to see how changes in your vision can occur.

What are the symptoms of DME?

Most people with DME will have symptoms ranging from blurriness to more extensive vision loss.³ It's important to get a dilated eye exam at least once a year to detect changes in vision.² Symptoms of DME may include:



Blurriness in the center of vision^{2,3}



Blind spots or patches²



Straight lines that look wavy³



Colors appearing dull or washed out³

Types of Eye Doctors

What are the different kinds of eye doctors?

It is important to see the right type of eye doctor for your needs. Each has a different level of training, skill set, and role in providing eye care.

Optometrist⁶

An optometrist is also known as a Doctor of Optometry (OD). You may go to an optometrist for eye exams, vision tests, corrective lenses, and diagnosis of eye disease. Optometrists can use medications to treat many diseases and can make recommendations for lifestyle and nutrition modifications to support eye health.

Ophthalmologist⁶

An ophthalmologist is a Medical Doctor (MD) or a Doctor of Osteopathy (DO) specializing in eye care and vision. An ophthalmologist can perform eye exams and vision tests, diagnose and treat eye diseases, and perform surgery.

Retina specialist⁷

A retina specialist is an ophthalmologist with additional years of specialized training in treating diseases of the retina. Retina specialists treat a wide range of eye conditions and often work in hospitals and eye clinics. If you have diabetic eye disease, you may need to see a retina specialist to help manage your disease.



The sooner you visit your eye doctor if you have vision changes, the better.²

Be sure to see your eye doctor for a dilated eye exam at least once a year.²

Disease Detection

How are DR and DME diagnosed?

Your eye doctor will review your medical and family history and do a complete eye exam to find out if you have DR or both DR and DME. The eye exam may include the following tests:



Visual acuity test²

This test measures how well you see the letters on an eye chart from a distance.



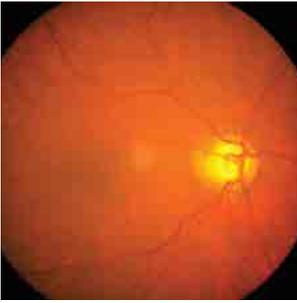
Dilated eye exam²

Your doctor puts drops into your eye to dilate (widen) the pupil. He or she can then see in the back of the eye, including the retina, for signs of problems or changes.



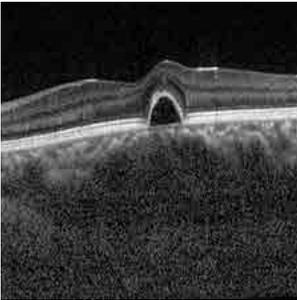
Tonometry²

This test measures the pressure inside your eye.



Fundus photography⁴

This test lets your eye doctor look closely at your retina by taking pictures of the back of the eye.



Optical coherence tomography²

This scan shows the layers of the retina and measures retinal thickness. It can help show your eye doctor if fluid is within or under the retina and other signs of diabetic eye disease.



Fluorescein angiography²

Dye is injected into a vein in your arm. The dye lets your eye doctor see the blood vessels in your eye to check for leaks or changes in the retina.

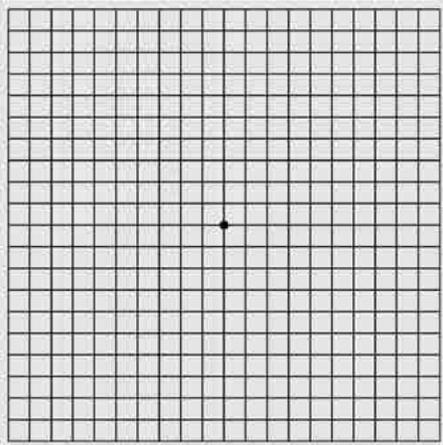
Take the Amsler Grid test to see if you have signs of diabetic eye disease³

The Amsler Grid is a simple eye test that can be used at home to alert you to vision changes that may be signs of diabetic eye disease.

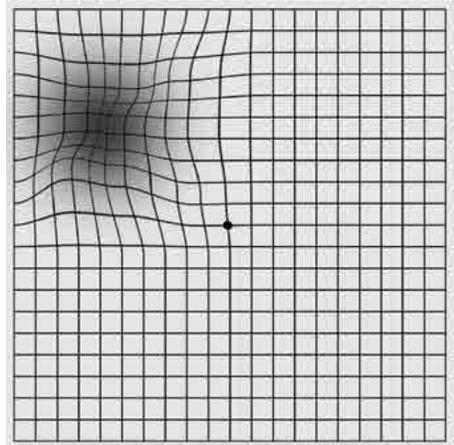


Amsler Grid Example

Normal Vision



Impaired Vision



How to use your Amsler Grid

1. Attach the grid to a flat surface, such as a wall or refrigerator.
2. Stand at arm's length from the grid.
3. Put your glasses on, if you normally wear glasses.
4. Cover one eye.
5. Focus on the dot at the center of the chart, with the other eye.
6. If any lines appear wavy, distorted, or are missing, take note.
7. Repeat the procedure for the other eye.

Be sure to contact your eye doctor if some of the straight lines in the grid look wavy, distorted, or are missing.

Treatment Options

How are DR and DME treated?^{3,4,8}

Treatment goals of DR and DME include:

- Slowing down the disease
- Maintaining current vision
- Restoring lost vision

Your eye doctor
will discuss
treatment
options with you.



Treatments include²:

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 injected into the eye by an eye doctor.

Steroids

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

Laser therapy

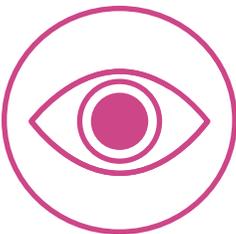
Laser photocoagulation uses a beam of light to seal off or destroy leaking vessels.

Lifestyle and Outlook

How can I take part in my eye care?

You can help protect yourself against vision loss from diabetic eye disease by working with your eye care team. Here are some suggestions to get the information you need to help manage diabetic eye disease:

- If you notice any changes in your vision, see your eye doctor as soon as possible²
- Have a comprehensive eye exam at least once a year²
- Take a friend or family member with you to an eye care appointment to take notes of what you are told
- Ask your eye care team for printed materials about your condition, and ask where you can go for more information
- Other members of your eye care team, such as nurses, can be good sources of information. Talk to them, too



You are not alone.

Your eye care team can help you manage your eye health and your eye condition. Your loved ones and friends are there to support you, too.

How to help reduce the risk of developing diabetic eye disease



The best way to reduce the risk of developing diabetic eye disease is to control diabetes by doing the following:

- Work toward keeping blood sugar and A1C levels within target range^{2,4}
- Work toward controlling your blood cholesterol and blood pressure levels²
- Take medication as directed by a healthcare provider²
- Eat nutritious food, eat quantities in moderation, and exercise regularly to maintain a healthy weight²
- Don't smoke⁵

Be sure to use all resources and support available to you.

See pages 20-21 for more information and to find low vision support in your community.

Low Vision Support

Where can I get more information?

American Diabetes Association

diabetes.org

1-800-342-2383

American Foundation for the Blind

afb.org

1-800-232-5463

Discovery Eye Foundation

discoveryeye.org

1-310-623-4466

Lighthouse Guild

lighthouse.org

1-800-284-4422

National Eye Institute

nei.nih.gov

1-301-496-5248

National Institute of Diabetes and Digestive and Kidney Diseases

niddk.nih.gov

1-800-860-8747

Prevent Blindness

preventblindness.org

1-800-331-2020

VisionAware

visionaware.org

Need a ride to and from your eye doctor appointment?

Rides in Sight* is a nonprofit service that works to help find local rides. Visit ridesinsight.org or call **1-855-607-4337**.



While Regeneron Pharmaceuticals does provide financial support to patient support organizations, Regeneron does not endorse any specific patient organization. The information provided by Regeneron or these organizations is meant for informational purposes only and is not meant to replace a physician's medical advice.

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Visit LookToYourFuture.com
for more tips and information on DME.

Questions to Ask

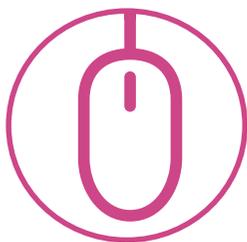
Some suggested questions to ask your eye doctor

- What is my diagnosis? (Ask your eye doctor to spell any unfamiliar words)
- How might this condition affect my vision?
- Have I already lost any vision?
- When will treatment start?
- What are the benefits of treatment?
- How often do I need to get treatment?
- Is there anything I can do to help protect my vision?
- Are there any low vision services in my area?

Don't be afraid to ask questions.
Your eye care team is there to help you
and answer all your questions.

References

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- 8.** Mavrikakis E. Macular edema in diabetes treatment and management. Medscape website. <http://bit.ly/2oVo8b9>. Accessed April 26, 2017.



For additional information
on diabetic eye disease,
visit [LookToYourFuture.com](https://www.looktoyourfuture.com)

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