

Focus on Diabetes Pocket Guide

Guide to Clinical Eye Care for Patients with or at-risk for Diabetes

The American Diabetes Association® (ADA) has summarized key clinical recommendations for health care professionals on eye health management for people with or who are at-risk for diabetes.

Annual comprehensive eye exams play a crucial role in the early detection, intervention, and prevention of eye disease and vision loss caused by diabetes. Early detection, timely treatment, and appropriate follow-up care can reduce a person's risk for severe vision loss from diabetic eye disease by 95 percent¹.

For those living with, or at risk for diabetes, an annual eye exam is a must – offering a simple and non-invasive way to prevent or delay disease and vision loss caused by diabetes. Diabetic eye disease is diagnosed through:

- Comprehensive and dilated exams which allow professionals to closely examine the retina.
- Retinal photography and other imaging such as optical coherence tomography (OCT), which uses light waves to take pictures that show the retina's distinctive layers to detect macular edema, assess glaucoma, and monitor other eye conditions.

TYPES OF DIABETIC EYE DISEASE

DIABETIC RETINOPATHY (DR)

Many people with diabetes may have **diabetic retinopathy** without symptoms.

The two most common types of diabetic retinopathy are non-proliferative and proliferative.

Non-proliferative diabetic retinopathy (NPDR) is often considered a precursor to proliferative diabetic retinopathy, as symptoms are mild or asymptomatic. As the blood vessels in the retina are weakened, microaneurysms form and may leak fluid into the retina.

This leakage may result in swelling of the macula.

Proliferative diabetic retinopathy (PDR) is a more advanced form of the disease. As retinopathy worsens, circulation issues restrict oxygen to the retina. As new, weakened blood vessels start to grow in the retina they can leak blood into the vitreous clouding vision. This can block vision or cause scarring that can lead to retinal detachment.

RECOMMENDATIONS AND/OR TREATMENT

Managing blood glucose levels to personalized targets is key to avoiding serious eye problems.

Management of diabetes including blood pressure and lipid control can also reduce the risk or slow the progression of diabetic retinopathy. Prevention is always first, but if damage happens, it can be treated.

DIABETIC MACULAR EDEMA (DME)

Macular edema can occur with non-proliferative diabetic retinopathy. It is caused by fluid leaking from capillaries into the macula, where focusing occurs.

As the macula swells with fluid, vision blurs and can be lost entirely.

RECOMMENDATIONS AND/OR TREATMENT

Although non-proliferative retinopathy usually doesn't need treatment, macular edema must be treated.

Effective treatment options such as eye injections, eyedrops, laser treatment or surgery can stop or reverse vision loss.

CATARACTS

Cataracts cloud the eye's clear lens, which can block sight.

People with diabetes are at greater risk for cataracts and are often diagnosed younger and with faster progression.

In people with diabetes, retinopathy can advance more quickly, and glaucoma may start to develop after this procedure.

RECOMMENDATIONS AND/OR TREATMENT

Mild cataracts may require sunglasses and glare-control lenses in their glasses.

Severe cataracts may require surgery to replace the clouded lens with an artificial one.

GLAUCOMA

Glaucoma is more common in people with diabetes.

As pressure builds up in the eye, blood vessels which travel to the retina and optic nerve are pinched and vision is gradually lost.

RECOMMENDATIONS AND/OR TREATMENT

Treatment options include medications and surgery.

RISK FACTORS FOR DIABETIC EYE DISEASE

When combined with high blood glucose, many other factors can increase the risk of diabetic eye disease, including:

- Hypertension
- Diabetes duration
- Diabetes management
- Tobacco use
- Dyslipidemia
- Kidney disease
- Pregnancy
- Belonging to a high-risk group (Hispanic or Latino, Black or African American, American Indian, Alaska Native or Asian)

SYMPTOMS OF DIABETIC EYE DISEASE

Approximately 20% of people with newly diagnosed type 2 diabetes already have some form of eye disease. By the time symptoms occur, substantial damage may have occurred. It is important to know the symptoms, which may include:

- Blurred or distorted vision
- Difficulty reading
- The appearance of spots or “floaters”
- A shadow across the field of vision
- Eye pain or pressure
- Difficulty with color perception

Patients should promptly be referred to see their eye doctor if they experience any of these symptoms.

TREATMENT RECOMMENDATIONS

Two of the main motivations for screening for diabetic retinopathy are to prevent loss of vision and to intervene with treatment when vision loss can be prevented or reversed.

Significant progress has been made in treatments which may prevent blindness in most people. Early diagnosis increases the likelihood of successful treatment. Common treatments include:

- Anti-vascular endothelial growth factor (VEGF) injections for macular edema
- Laser photocoagulation or anti-VEGF injections for severe non-proliferative or proliferative DR
- Surgery

Providers should promptly refer patients with any level of macular edema, severe non-proliferative diabetic retinopathy, or any proliferative diabetic retinopathy, to an ophthalmologist and/or retina specialist.

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PREGNANCY

- Rapid progression of diabetic retinopathy can be associated with pregnancy.
- Women with preexisting type 1 or type 2 diabetes who are planning pregnancy or who have become pregnant should be counseled on the risk of development and/or progression of diabetic retinopathy³.
- Women who develop gestational diabetes do not require eye examinations during pregnancy and do not appear to be at increased risk of developing diabetic retinopathy during pregnancy³.
- Eye examinations should occur before pregnancy or in the first trimester in patients with preexisting type 1 or type 2 diabetes, and then patients should be monitored every trimester and for one year postpartum as indicated by the degree of retinopathy³.

EYE EXAM RECOMMENDATIONS²

Dilated eye exams should be performed using validated approaches and methodologies. Programs that use retinal photography (with remote reading or use of a validated assessment tool) to improve access to diabetic retinopathy screening can be appropriate screening strategies². Such programs need to provide pathways for timely referral for a comprehensive eye examination when indicated.

Population	Recommendation
Prediabetes	Individualized approach for each patient
Adults with type 1 diabetes	Initial dilated exam within 5 years after the onset of diagnosis
Type 2 diabetes	Initial dilated exam at the time of diagnosis
Youth with type 1 or type 2 diabetes	Youth are also at risk for complications and need to be screened

If an eye care professional has not found evidence of retinopathy during one or more annual eye exams, and glycemia is well controlled, then screening every one to two years may be considered².

- If any level of diabetic retinopathy is present, subsequent dilated retinal examinations should be repeated at least annually by an ophthalmologist or optometrist. If retinopathy is progressing or sight-threatening, then examination will be required more frequently².
- Patients with macular edema or severe non-proliferative or proliferative diabetic retinopathy should be referred to an ophthalmologist and/or retina specialist.
- Eye examination results should be documented and made available to the referring health care professional.

INTERDISCIPLINARY COMMUNICATION



Evidence shows team-based care can improve a patient's blood glucose, blood pressure, and cholesterol levels. All health care team members should be aware of each patient's medical status and individual therapeutic targets. **Collaboration among primary care providers, optometrists, and ophthalmologists is necessary for early identification of diabetic eye disease and treatment.**

PRIMARY CARE PROVIDERS SHOULD BE AWARE OF THE FOLLOWING:

- If the patient has diabetic eye disease
- If the patient is being referred to an eye care specialist
- When the patient's next eye care appointment is

EYE CARE PROFESSIONALS SHOULD BE AWARE OF THE FOLLOWING:

- What the patient's current treatment regimen is
- What the patient's individualized glycemic targets are
- Whether there have been any recent changes to regimen or glycemic control
- Relevant laboratory test results
- Whether the patient has any comorbidities or complications

¹<https://www.nei.nih.gov/sites/default/files/2019-06/diabetes-prevent-vision-loss.pdf>

²"Microvascular Complications and Foot Care: Standards of Medical Care in Diabetes—2020." Diabetes Care 43. Supplement 1 (2020): S135-S151.

³"Management of Diabetes in Pregnancy: Standards of Medical Care in Diabetes—2020." Diabetes Care 43. Supplement 1 (2020): S183-S192.

TO HELP YOUR PATIENTS LEARN MORE ABOUT EYE HEALTH AND FIND AN EYE CARE PROVIDER, VISIT [EYEHEALTH.DIABETES.ORG](https://www.eyehhealth.diabetes.org)



VISIONARY PARTNERS

