



Non-Laser Treatment of Diabetic Macular Edema

Injection of corticosteroids or other medications into the eye — either directly or in the form of an injectable implant — is often recommended over laser procedures for the treatment of diabetic macular edema or in some cases, a combination of drug injections and laser treatment may be recommended.

Anti-VEGF drugs or drug-releasing implants that are FDA-approved for injection into the eye for treatment of DME include:

- Avastin
- Ozurdex (Allergan)
- Accentrix
- Eylea (Regeneron)

Avastin: Bevacizumab has recently been used by ophthalmologists in an off-label use as an intravitreal agent in the treatment of proliferative (neovascular) eye diseases. Although not currently approved by the FDA for such use, the injection of 1.25-2.5 mg of bevacizumab into the vitreous cavity has been performed without significant intraocular toxicity. Many retina specialists have noted impressive results in the setting of proliferative diabetic retinopathy, and diabetic macular edema

Ozurdex, another FDA-approved implant for DME treatment, releases a sustained dose of dexamethasone (a corticosteroid) to the retina. In September 2014, Ozurdex received approval for all patients with diabetic macular edema.

Lucentis (ranibizumab) is an injectable anti-VEGF drug that gained FDA approval for the treatment of diabetic macular edema in 2012. The recommended dosage of Lucentis is 0.5 mg administered by injection into the eye once a month.

EYLEA® (aflibercept) Injection is a prescription medicine approved for the treatment of patients with DME and DR in patients with DME. The recommended dose for DME and DR in patients with DME is the same: 2 mg of EYLEA administered by injection into the eye every 2 months (8 weeks) following 5 initial monthly (4 weeks) injections

FAQ'S

Who is at the most risk for diabetic retinopathy?

Fluctuating blood sugar levels increase risk for this disease, as does long-term diabetes. Most people don't develop diabetic retinopathy until they've had diabetes for at least 10 years.

Is there any way to prevent diabetic retinopathy?

Keeping your blood sugar at an even level can help prevent diabetic retinopathy. If you have high blood pressure, keeping that under control is helpful as well. Even controlled diabetes can lead to diabetic retinopathy, so you should have your eyes examined once a year; that way, your doctor can begin treating any retinal damage as soon as possible. Eye examinations are advised the moment an individual is detected with diabetes mellitus. Persons suffering from diabetic retinopathy may not have visual symptoms to begin with but can suddenly develop profound visual loss if not detected at an early stage.

What are the signs and symptoms of diabetic retinopathy?

In the early stages of diabetic retinopathy, you might have no symptoms at all, or you might have blurred vision.

In the later stages, you develop cloudy vision, blind spots or floaters. But never assume that good vision means all is well in the retina. This can be a setup for disaster.

Is diabetic retinopathy curable?

No. Early treatment can slow the progression of diabetic retinopathy, but is not likely to reverse any vision loss.

What diabetic retinopathy treatments are currently available?

The best treatment is to keep your diabetes under control; blood pressure control also helps.

Your doctor may decide on laser photocoagulation to cause regression of leaking blood vessels and prevent new blood vessel growth. If blood gets into the vitreous humor, your doctor might want to perform a procedure called a **vitrectomy**.

PREVENTION TIPS

If you want to avoid diabetic retinopathy or control its progress, try these tips:

- Keep blood sugar within normal limits
- Monitor blood pressure and keep it under good control
- Maintain a healthy diet
- Exercise regularly
- Do not smoke
- Follow your doctor's instructions

Above all, make sure you have regular eye exams!!

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If you are a diabetic, then do remember to...



Get your eyes checked by an vitreo-retina expert every 6 months.



Meet your diabetologist regularly to keep a track of your medicine, diet and weight.



Check your blood sugar apart from HbA1c & Lipid Profile periodically (6 monthly).



Regular physical activity helps in keeping weight in check and is a useful lifestyle modification in the management of diabetes

Points to Remember

1. Diabetic eye disease comprises a group of eye conditions that affect people with diabetes. These conditions include diabetic retinopathy, diabetic macular edema (DME), cataract, and glaucoma.

2. All forms of diabetic eye disease have the potential to cause severe vision loss and blindness.

3. Diabetic retinopathy involves changes to retinal blood vessels that can cause them to bleed or leak fluid, distorting vision.

4. Diabetic retinopathy is the most common cause of vision loss among people with diabetes and a leading cause of blindness among working-age adults.

5. Controlling diabetes by taking medications as prescribed, staying physically active and maintaining a healthy diet can prevent or delay vision loss.

6. Because diabetic retinopathy often goes unnoticed until vision loss occurs, people with diabetes should get a comprehensive dilated eye exam at least once a year.

7. Early detection, timely treatment, and appropriate follow-up care of diabetic eye disease can protect against vision loss.

8. Diabetic retinopathy is largely treatable condition. Early detection and treatment helps to save your eyes.

References:
http://www.joslin.org/info/general_diabetes_facts_and_information.html
<http://www.diabetes.co.uk/global-diabetes/diabetes-in-india.html>

“Patient Information on Diabetic Retinopathy”


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ABOUT DIABETES

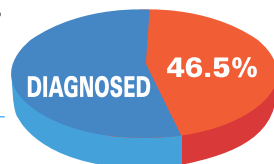


Diabetes is a disease in which the body is unable to properly use and store glucose (a form of sugar). Glucose backs up in the bloodstream - causing one's blood glucose (sometimes referred to as blood sugar) to rise too high. The long term effects are on eyes, kidneys, nerves, skin and heart.

FACTS ABOUT DIABETES

(Source: International Diabetes Federation)

46.5% of adults with diabetes are undiagnosed



By 2040, **1 adult** in 10 (642 million) will have diabetes

12% of global health expenditure is spent on diabetes (\$673 billion)



Every **6 seconds** a person dies from diabetes (5 million deaths)



How does diabetes affect the eye?

In the **mild stages** there can be few bleeding spots on the retina (back portion of the eye).

In severe cases the bleeding inside the eye may increase and reduce vision. Sometimes the retina can get pulled apart (Retinal Detachment) leading to loss of vision.



Early Stages



Late Stages



Retinal Detachment

Effects of diabetes on the eye?

- Early development of **Cataract** (cloudiness of the natural lens in the eye).
- **Diabetic Retinopathy** affects blood vessels in the light-sensitive tissue called the retina that lines the back of the eye. It is the most common cause of vision loss among people with diabetes and the leading cause of vision impairment and blindness among working-age adults.
- **Diabetic Macular Edema (DME)**. A consequence of diabetic retinopathy, DME is swelling in an area of the retina called the macula.



Diabetic retinopathy has four stages:

1. Mild Nonproliferative Retinopathy: At this earliest stage, microaneurysms occur. They are small areas of balloon-like swelling in the retina's tiny blood vessels.

2. Moderate Nonproliferative Retinopathy: As the disease progresses, some blood vessels that nourish the retina are blocked. Dot and blot haemorrhages develop in few parts of the retina.

3. Severe Nonproliferative Retinopathy: Many more blood vessels are blocked, depriving several areas of the retina with their blood supply. These areas of the retina send signals to the body to grow new blood vessels for nourishment. Haemorrhages are present all over the retina.

4. Proliferative Retinopathy: At this advanced stage, the signals sent by the retina for nourishment trigger the growth of new blood vessels. This condition is called proliferative retinopathy. They grow along the retina and along the surface of the clear, vitreous gel that fills the inside of the eye. However, they have thin, fragile walls. If they leak blood, severe vision loss and even result in blindness. They can also cause a pull on the retina leading to retinal detachments.

Blood vessel leakage from diabetic retinopathy can cause fluid to accumulate in the macula, the central part of retina which is the most sensitive part, that is responsible for central vision and color vision. This condition — called diabetic macular edema (DME).

Clinically significant macular edema (CSME): This swelling of the macula more commonly is associated with diabetes. Macular edema may cause reduced or distorted vision.



Treatment options: Lasers for Diabetic Retinopathy Treatment

The two types of laser treatments commonly used to treat significant diabetic eye disease are:

Focal or grid laser photocoagulation: This type of laser energy is aimed directly at the affected area or applied in a contained, grid-like pattern to destroy damaged eye tissue and clear away scars that contribute to blind spots and vision loss. This method of laser treatment generally targets specific, individual blood vessels.

Scatter (Pan-Retinal) laser photocoagulation: With this method, about 1,200 to 1,800 tiny spots of laser energy are applied to the periphery of the retina, leaving the central area untouched.

