



DIABETIC MACULAR EDEMA

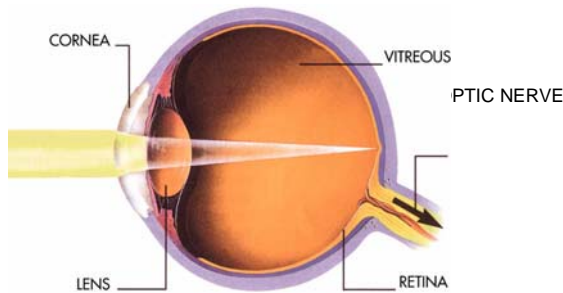
Diabetic macular edema is a potential cause of painless vision loss in the central field of vision of diabetics. There may be distortion, color vision changes, a central blind or gray spot, and objects may look smaller. It is the leading cause of legal blindness in people with diabetes.

In early cases, laser treatment can avert vision

loss. When vision is affected, laser treatment has about a 15% chance of vision improvement.

The main reason to treat diabetic macular edema is to reduce the risk of further vision loss by up to 60%. The key is early detection and treatment. Effective treatment may be necessary even before visual symptoms.

HOW THE EYE WORKS



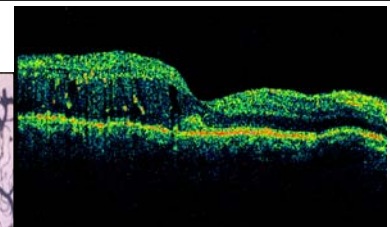
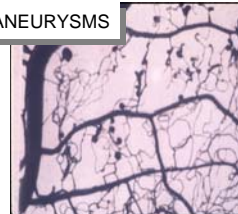
The eye works like a camera. The lens and cornea focus light rays. The retina works like the photographic film in a camera. The macula is part of the central retina, with which we see fine details and color.

Diabetes affects the retinal blood vessels and makes them leaky. The leaking fluid may cause the layers of the retina to swell, or to develop edema. This edema can cause vision to blur.

BACKGROUND (NON-PROLIFERATIVE) DIABETIC RETINOPATHY

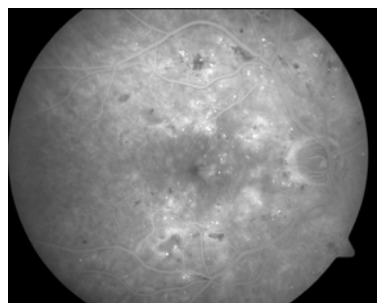
One form of diabetic retinopathy is background retinopathy. Small hemorrhages may come and go in the retina. Small blood vessels may expand (like a balloon) to form microaneurysms. These can leak fluid or blood into the retina. In its early stages, this causes no vision symptoms. Periodic examination is needed to prevent loss of vision.

MICROANEURYSMS



Diabetic Macular Edema
Optical Coherence Tomography

FLUID WITHIN THE CENTRAL RETINA



Diabetic macular edema is fluid in or near the central retina. As the fluid leaks, fat, cholesterol, and protein as leak into the retina. As the fluid is resorbed, the solid materials may deposit in the retina as hard exudate. We decide on treatment based on location of fluid and exudate.

WHO GETS DIABETIC MACULAR EDEMA?

Diabetic macular edema can occur in anyone with diabetes, but is more common in those who do not require insulin, and when diabetes or blood pressure is poorly controlled. It can occur despite

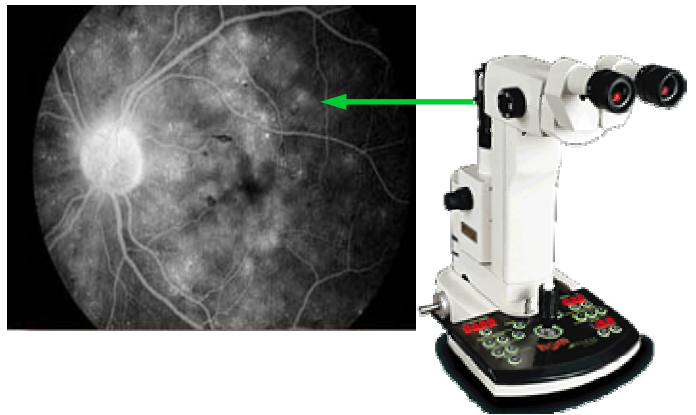
good blood sugar control. It is more common after cataract surgery or intraocular inflammation (uveitis). Longer duration of diabetes is associated with greater occurrence of diabetic macular edema.

LASER TREATMENT FOR DIABETIC MACULAR EDEMA

Laser photocoagulation is the application of a bright light to seal the leaky spots found on the fluorescein angiogram. Laser treatment closes leaky vessels, and slowly leads to resorption of fluid from the retina. Although it takes only a few minutes to do, it takes about 3 months to work. You may need more than one treatment, 3 months or more after first treatment.

Focal or grid laser has been shown to reduce the risk of vision loss if there is: (1) retinal thickening within the center of the retina; (2) hard exudate with thickening less than one half millimeter from the center of the retina; or (3) retinal thickening at least as large as the optic nerve area, within one optic nerve diameter from the center of the retina.

The treatment itself involves the application of a numbing eye drop, followed by the insertion of a contact lens. A beam of light is focused in the



back of the eye. Up to 100 laser spots are applied to leaky areas of the retina. No patch is needed.

After the laser, it takes between 5-30 minutes for colors to appear normal. You may have mild blur for a couple of weeks. You may see spots for weeks to months before they spontaneously fade. Have someone else drive you the day of laser.

ALTERNATIVE TREATMENTS FOR DIABETIC MACULAR EDEMA

The most important part of treatment for diabetic macular edema is good control of blood sugar, blood pressure and the avoidance of smoking.

Occasionally, laser treatment does not make the macular edema go away. A steroid injection may be used either near the eye or in the eye to make

the edema go away. Other treatments may include use of steroid and non-steroidal anti-inflammatory eye drops, or vitrectomy surgery. Rarely, a mild diuretic or an anti-histamine pill may be used. On the horizon, there are experiments with the use of an implantable steroid delivery device.

DIABETIC MACULAR EDEMA PROGNOSIS

The prognosis for vision depends on how close the edema or exudate is to the center of vision. Over all we reduce the risk of vision loss by 50-60% with laser treatment in diabetic macular edema.

This means that despite laser, sometimes vision may continue to decline, but less often than without laser. If the central macula is involved, there is a 15% chance of vision improvement.