

IOWA CITY DEPARTMENT OF VETERANS AFFAIRS (VA) MEDICAL CENTER



Medical Center

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Community-Based Outpatient Clinics

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Dry Eye Syndrome: Excessive Tear Evaporation

Dry eye syndromes can be caused by excessive tear evaporation. The root cause of this condition is obstruction and poor quality of the eyelid (meibomian) oil glands. These glands are responsible for coating the tears with a layer of oil that helps prevent evaporation.

Meibomian gland dysfunction, or, more simply, MGD, is the most common dry eye syndrome, accounting for approximately **85%** of cases. MGD may occur as a consequence of getting older and may become symptomatic in 10% to 15% of adults over the age of 50. It can also occur in patients with *acne rosacea* (where it is almost universally present), in patients with multiple *allergies* (especially those with strong family histories of allergy and/or eczema), and after *eye surgery* (especially LASIK, but also after cataract or glaucoma surgery).

The MOST common symptom of MGD is *fluctuation of vision*. This is most noticeable during visual tasks that are associated with decreased blinking, such as reading, using the computer, watching television, and driving. It is aggravated during exposure to “evaporative conditions,” such as low environmental humidity and blowing air, especially ceiling and floor fans and heaters or air conditioners. The blurred vision can often be relieved temporarily by blinking or installation of ocular lubricants. Despite having a dry eye syndrome, paradoxical reflex tearing may occur, especially in response to blowing wind or fans. Other common symptoms include mild discharge or crusting of the eyelids upon awakening, a sensation of “dryness,” foreign body sensation, burning and light sensitivity. Many patients have a history recurrent “styes” or “pink eye.”

Meibomian gland dysfunction is a **chronic condition** that CANNOT be completely cured, but which CAN be treated. The ONLY treatments that directly address the root cause of this abnormality are those that reduce **eyelid oil gland obstruction** and **improve the quality of eyelid oils**.

Reduced eyelid oil gland obstruction can be achieved with **daily lid hygiene**, **HOT compresses**, and **massage**. The lids can be cleaned upon awakening with a clean wash cloth. In more advanced cases, additional cleaning may be required with dilute Johnson’s baby shampoo or commercially available eyelid hygiene products, such as SteriLid®, Ocusoft® or Avenova®. After the eyelids are clean, HOT (at least 110°F) compresses should be applied to the upper and lower eyelids for 2 to 5 minutes. Massage of upper and lower eyelids should be done in conjunction with or immediately after the hot compresses. You own treatments can be enhanced with vigorous gland expression and eyelid debridement by your eye care practitioner during your office visits.

Improved quality of eyelid oils can be achieved with the use of **daily fish oil supplements** (1000 mg) and generous oral hydration. In more advanced cases, your physician may recommend a **PROLONGED** course of **oral antibiotic therapy** with Doxycycline®, Minocycline® or Azithromycin®. These tablets are usually prescribed daily for 3 weeks and then reduced to 3 times a week (usually on Monday, Wednesday, and Friday). It is important to understand that these medications are being used for their eyelid oil-altering properties, and **NOT** for their antibiotic effect.

SYMPTOMATIC relief of MGD can be obtained with **eye drops, environmental manipulations, and improved blinking techniques.**

Eye drop therapy includes the use of antibiotics (such as erythromycin, bacitracin, or tobramycin) and/or steroids (such as dexamethasone or fluorometholone), especially during initial treatment and during acute exacerbations. Antihistamine drops are used in patients with significant allergies or ocular itching. Lubricating tear drops or ointments and/or punctal plugs are used in eyes with inadequate tear production. Although many over-the-counter lubricants are available, the use of products which contain extra oil, such as Systane Balance®, are more effective in reducing visual fluctuation and in providing more lasting relief.

Environmental manipulations include the use of room humidifiers (especially during winter months), avoidance of direct exposure to ceiling or floor fans, heaters, or air conditioners, minimizing exposure to blowing wind with spectacles, sunglasses, or moist chamber glasses, and, for allergic patients, avoidance of allergens such as wool blankets and shag carpets. Some patients, especially those with sleep apnea, benefit from the use of sleep goggles or masks.

Blinking techniques include conscious efforts to increase blink rates during prolonged visual tasks. Eyelid squeezing exercises improve the tone of the muscle that is responsible for eyelid closure and, in time, can improve eyelid blinking. This allows for better meibomian gland expression and oil distribution within the tear film.

It is easy to become discouraged during early treatment of MGD since symptomatic improvement is slow (usually for 3 to 6 weeks before improvement begins), the progress can be very gradual, and total relief is seldom obtained. An ambitious, but *realistic* therapeutic goal is to eventually achieve 80% relief, 80% of the time, in 80% of treated cases.

Recently, the Iowa City VAMC Eye Clinic has acquired the Laser Thermal Pulse System, which allows us to perform a treatment, popularly known as “**LipiFlow**,” to facilitate the effect of traditional therapy. This treatment helps relieve the oil gland obstruction and remove poor quality oils and debris, thereby “resetting” the glands to a better level of function. LipiFlow enhances the effect of your on-going efforts to maintain good oil gland function and ocular surface health. It is recommended for patients who have had at least 6 weeks of traditional therapy. It is more effective in patients who are highly compliant with the recommended therapy, as well as those with only mild-to-moderate disease. The effect of “resetting” the glands may last up to 2 to 5 years, after which the treatment can be repeated, if necessary. Please feel free to ask your VA eye care practitioner if you are a potential candidate for this treatment.