

Meibomian Gland Probing in the UK

Meibomian Gland Disorder

There are various eye-related illnesses and conditions, including many uncommon ones that few individuals may know about. The vast majority know about the normal ones, for example, glaucoma, or macular degeneration. In any case, meibomian gland disorder (MGD) is an odd blend of the two. It is extraordinarily common.

MGD, called meibomianitis as well as blepharitis, is a condition wherein the meibomian glands inside the eyelids fail to work correctly. Under ordinary conditions, these glands are in charge of creating limited quantities of oil that helps keep the eyes lubricated by mixing with the tears in the eyes. Without this substance, the watery segment of tears would evaporate rapidly, leaving the eyes feeling exceptionally dry and aggravated.

Blepharitis



Each eye have about 50 to 70 meibomian glands with the upper eyelids, as a rule, having marginally more than the lower eyelids. They can become blocked by oil that has solidified. When this occurs a number of issues can arise. The obstructed glands can swell, loading up with solidified oil that is unable to be secreted into the eye and becomes unfit for its purpose. These swellings are called eye cysts and can end up contaminated. These cysts form red bumps that can develop to around a centimeter wide. At times these blockages can deplete individually, or with the use of a heat pad or a wash cloth soaked in warm water. They may also need to be treated by a specialist.

Blockages can be brought about by dried liquids, dead skin cells or even little parasites called Demodex vermin that live inside the glands. Specific cleansers for washing the eyelids can help with the greater part of these causes, except parasites which will require a professionally to prescribe medications to deal with them.

Practically the majority of dry eye illness is related to MGD, which influences an alarming number of individuals in the world. MGD influences almost 60% surprisingly and is substantially more common in individuals over 40 years of age. Be that as it may, not all demographics are at equivalent risk. Between 50-70% of the population of nations like Thailand, Japan and China are influenced, compared to just 3-20% of individuals in the US, Australia, and Canada.

An individual's eye cleansing routine and use of restorative products can also contribute towards MGD, particularly those products which are used near the edges of the eyes. Being cautious during the application of such products will decrease the risk of inadvertently blocking the meibomian glands.

Indications of Meibomian Gland Dysfunction

The indications of meibomian gland dysfunction are the same for all intense and purposes as those of dry eye disorder. These include red, irritating eyes, foreign body sensations, obscured vision and the impression of an outside body on the eye. Sadly, these symptoms alone are not sufficient to analyse the issue, as they may point to countless diverse eye-related issues. It is essential to book an appointment with an eye specialist who can provide a full examination and provide expert clinical analysis.

During the consultation, the specialist will probably apply light pressure to the eyelid trying to try to release the liquid inside the meibomian glands. Depending upon the findings of the eye specialist, a finding of MGD may be made.

Treating Meibomian Gland Dysfunction

To treat the condition, either the glands have to be unblocked or the oil that the glands are not adequately producing must be enhanced. Both of these methodologies are probably going to incorporate specific eye drops, intended to either release and alleviate symptoms or to saturate the outside of the eye.

Eye Lid Cleaning

The methodology of essentially applying a warm moist cloth will liquefy and lubricate the dried glands, opening them up. Fortunately, there are now more effective ways or treating MGD; for example, specialist equipment intended to test and expand the openings of the meibomian glands to allow the oil



they secrete to flow efficiently.

Meibomian gland testing: This is a straightforward method performed by your eye specialist to unclog the opening of your meibomian glands. After analgesic eye drops are applied to the eye, your specialist utilises a hand-held instrument to apply heat to the openings of your meibomian glands, close to the base of your eyelashes. This is an effective method for clearing blockages and freeing up the MGD manifestations. However, it does not keep the condition from resurfacing later on. Due to the danger of contamination presented by meibomian gland blockages, antibacterial eye drops may likewise be endorsed on occasions. However, they may not be required and should only be utilized under a specialist's suggestion.

Dietary enhancements or change can help and an adjusted intake of Omega-3 unsaturated fats can be particularly beneficial. These are found in fish and nuts and will help with the creation of oils inside the eyelids and skin. They offer the advantage of decreasing side effects, yet counteracting future issues too.

Similarly, as with any eye-related issue, your eye specialist will probably make a precise conclusion and tailor a good treatment plan for patients based on their individual needs. Anybody experiencing dry, aggravated eyes should book for an assessment with an eye care specialist. The earlier MGD is treated the better.

Am I eligible for treatment?

Should you experience the ill effects of meibomian gland dysfunction or the evaporative type of dry eye disorder then yes.

Dry eye disorder is classified into two main types:-

1. The Aqueous deficiency type (brought about by a deficient tear flow) due to poor discharge from the lacrimal glands.
2. The Evaporative type (brought about by evaporation of the tears) due to poor oil layer from Meibomian Gland Dysfunction.

It is additionally impacted by the eyelid structure, the visual surface and use of contact lenses.

There are numerous other affecting variables in dry eye, for example, prescriptions, hypersensitivity, past medical procedures, eye infections, Sjogren's disorder, thyroid problems, rheumatoid joint inflammation and hormones.

If you need help, guidance and treatment of your Meibomian Gland Disorder and want to find out more about Meibomian gland probing in the UK then please do not hesitate to fill out our test and contact us to speak to our highly experienced eye specialists.

[Book A Consultation](#)

Eye Drops for Dry Eyes

Lubricant drops often known as "artificial tears" are used as part of the treatment regimen for [dry eyes](#). In short, dry eyes may be caused by a deficiency in:

- The mucin layer of the eye
- The water layer of the eye
- The oil layer in the eye leading to increased evaporation (most common cause). This is known as MGD or Blepharitis.

Eye drops are easily available and do not need a prescription. They can be purchased on-line, at your pharmacy or local opticians. Eye drops can be used for treating the associated inflammation that is present in dry eye, however, eye drops only aim at replacing the poor tear film with a substitute. It does not treat the cause of the underlying problem.

Eye Drops – Lubricants

There are various forms of dry eye drops available. These can be briefly divided into the following categories:-

A. Drops

Such as Hypromellose, Carmellose and Polyvinyl alcohol eye drops. These are generally short acting.

B. Gels

Such as Viscotears, Xalin gel and Hyaluronidase based substances. These are gel preparations which have the advantage of being longer lasting, but are known to temporarily blur your vision.

C. Drops which target MGD and Blepharitis

There are certain drops, such as Emustil and Systane Balance which target MGD and [Blepharitis](#). They have a more oily nature and are aimed at replacing the oil layer which is deficient in oil. These are also available in a spray form known as Liposome spray.

D. Eye Ointments

These are much longer lasting preparations and are used before going to sleep. They are thick and oily and blur vision. Unfortunately, they do not tend to last long enough to be present in the eye upon waking after sleep leaving you with severe dry eye symptoms in the morning.

E. Preservative Free Drops

In patients with more severe dry eye the frequent use of preservatives can be toxic to the eye and in such cases preservative free drops are advantageous. These tend to be more expensive. It is preferable, in the first place, to use preservative free drops and these should always be used for people who wear contact lenses as the lens becomes a reservoir for preservatives.

Patients often find that drops are insufficient to control their symptoms despite their adequate use. This is generally due to the failure to treat the root cause where possible. This is where we at The Dry Eyes Clinic make every effort to offer treatments which come closer to treating the source of the problem. In MGD/Blepharitis we treat the meibomian glands with Lipiflow. In dry eye cases associated with decreased water layers we investigate the underlying disease mechanism, attempting to target the appropriate medicine if possible.

It is beneficial to try different types of drops and gels under the guidance of an ophthalmic professional to find the ones that suit you best.

Inflammation and Dry Eye

Unfortunately, dry eye is associated with inflammation which occurs as a result of the dry eye or may be the cause of the

dry eye itself. An Ophthalmologist, experienced in treating dry eye meibomian gland disease, may often add an anti-inflammatory drop or other medication to assist with redressing the associated inflammation and symptoms.

These medications come in four forms:-

A. Ciclosporin Eye Drops

This drop inhibits the inflammatory pathway and is only used in Specialist Departments such as The Dry Eye Clinic.

B. Corticosteroid Drops

These are wonderful drops for treating associated inflammation. They often produce rapid improvements. Unfortunately, long-term use of corticosteroids can lead to side effects such as glaucoma (increased pressure in the eye) and/or cataracts. These drops do, therefore, require supervision by an ophthalmic professional.

C. Omega 3 Fatty Acids

Omega 3 fatty acid, especially in high doses, are useful in reducing inflammation. They need to be given in adequate doses. The over-the-counter preparations are usually insufficient in strength and consultation with a suitably trained ophthalmic professional is recommended to get the dosage right for the individual patient.

D. Tetracycline Tablets

Tetracycline medication is an antibiotic which has anti-inflammatory properties. Used in low doses for periods of about 6 months they are useful adjuncts MGD/Blepharitis suffers. They have side effects such as photo toxicity (sensitivity) and need to be taken under the supervision and care of a doctor.

E. Serum Eye Drops

Serum eye drops are only used in refractory dry eye, where no other treatment has been proven to be beneficial. Normally, the patient's own blood is taken and processed in a laboratory. The serum is removed and refrigerated and is used by the patient. This is only offered in specialised centres within the UK and needs funding approval prior to the process being undertaken. NHS blood services are often involved in the process.

[Book A Consultation](#)

Working With Optometrists

The Dry Eyes Clinic was established in 2015 by Myer Yodaiken in Salford, Greater Manchester. Yodaiken, a consultant ophthalmologist, is himself a dry eyes sufferer. This caused him to explore chronic blepharitis treatments. While attending a conference some years back, he came across an exhibition stand demon-

strating [the LipiFlow system](#) and sister LipiView instrument (figure 1). The manufacturers TearScience were happy to demonstrate the system and subsequently treated Yodaiken with the objective of easing the underlying cause of his dry eyes. This changed the way in which he looked at the treatment of dry eyes.

The LipiFlow and LipiView equipment was, and still is, not widely available in the UK and Yodaiken decided to buy both machines to give relief to his dry eye patients initially in North West England.

FIGURE 1 The LipiView and LipiFlow system



DRY EYES CLINIC

As the Dry Eyes Clinic developed, it incorporated other technologies such as BlephEx. This acts as a mechanical debridement tool of the lid margin (figure 2), and is often used as a pre-treatment option to ensure the best impact for LipiFlow. There has also been the use of Heated Eye Pad (figure 3 – look out for a review in a forthcoming article) a new American way to heat the glands which, when coupled with advice on possible diet changes, eye hygiene, blinking exercise, working time with screens and other choices has led to positive outcomes.

As optometrists and ophthalmologists became aware that the LipiFlow could now be more easily accessed and that patients themselves were prepared to self-refer, the number of consultations at the Dry Eyes Clinic from further afield has increased. The clinics are committed to working with clinical

partners to offer local expertise with access to this new technology.

Dry Eyes Clinic has its base in Salford, but has recently opened two break-out clinics in North London and South London/Surrey to reduce patient journey times for treatment. Many of the patients attending clinics will have been pre-assessed by local clinical professionals.

FIGURE 2 The BlephEx in use



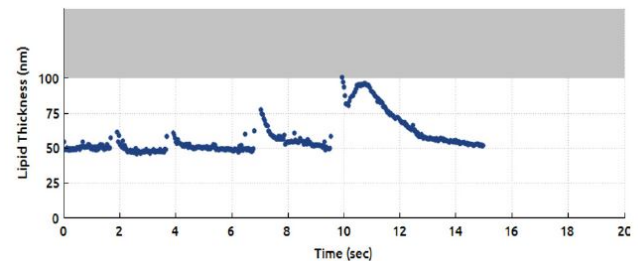
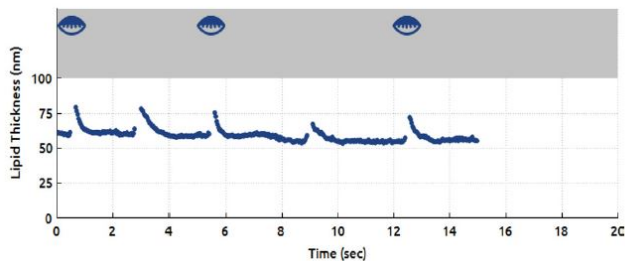
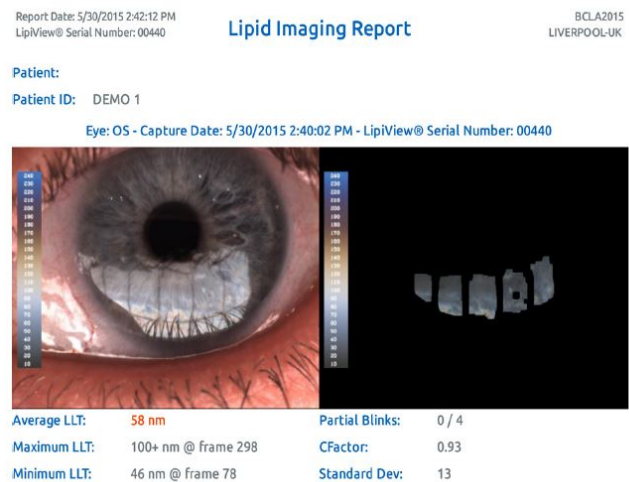
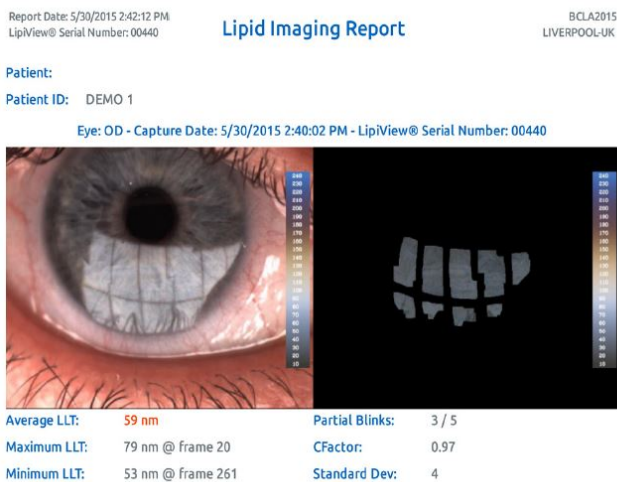
THE LIPIFLOW SYSTEM

An estimated 86% of the 100 million dry eye sufferers worldwide have meibomian gland dysfunction (MGD),¹ which stems from a deficiency in the oily lipid layer of the tear film. The lipids serve to protect the aqueous layer of tears and keep it from evaporating too quickly. Dry eye patients can be referred to the Dry Eyes Clinic for a full dry eye assessment. If a patient has evaporative dry eye, they may be a candidate for the LipiFlow treatment.

LipiFlow employs the application of localised heat and pressure in adult patients with chronic cystic conditions of the eyelids, including MGD, also known as evaporative dry eye or lipid deficient dry eye. The complete system includes;

- LipiView II Ocular Surface Interferometer – this captures detailed images of the glands and tear film (figure 4).
- Meibomian Gland Evaluator – this evaluates meibomian gland function.
- LipiFlow Thermal Pulsation System – this treats blocked mei-bomian glands.

FIGURE 4 Tear film interferometry pattern



Unlike traditional dry eye treatments (warm compresses, wetting drops, ointments) that address symptoms, LipiFlow treats the root cause, the obstructed meibomian glands. The goal of unblocking the glands is to allow them to resume their natural production of lipids required for a healthy tear film. The procedure includes;

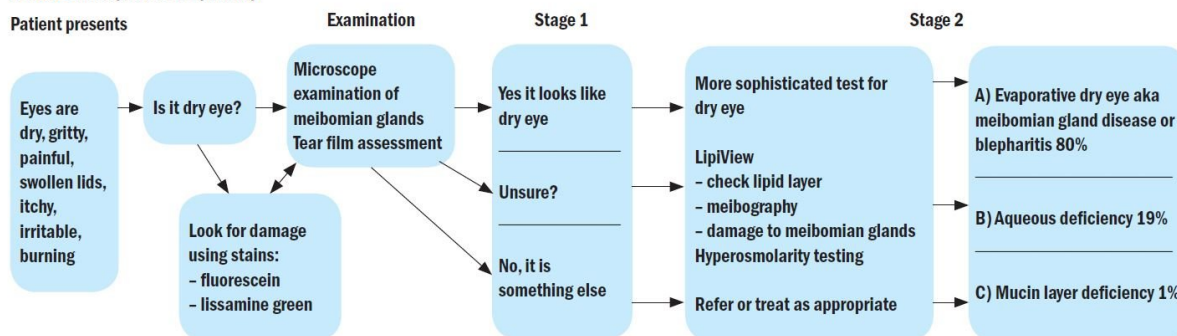
- A 12-minute in-practice procedure. Both eyes can be treated simultaneously.
- LipiFlow uses a disposable eye piece (Activator) to apply controlled heat to the inner eyelids and intermittent gentle pressure to the outer eyelid.

In a randomised, multi-centre, controlled clinical trial, 79%

of patients treated with LipiFlow reported an improvement in over-all dry eye symptoms.² The period of relief for patients varies, but when there is a positive impact the effects last typically for a year or more. Indeed, some cases can gain relief for longer when the treatment is combined with ongoing good lid management.

It should be noted that LipiFlow does not work for everyone, and the earlier in the disease progression the more likely treatment will succeed.. In some cases, due to meibomian gland damage, LipiFlow is not suitable as it is impossible to treat glands that no longer exist.

FIGURE 5A simplified care pathway



Treatment options	1	2	3	4
A) Evaporative dry eye (MGD, blepharitis) 80%	If deposits on the front lid clear with BlephEx	<ul style="list-style-type: none"> Artificial tears and advice Heat – warm compress/microwave pads/electronic eye pad Dampening of inflammation – steroid drops and/or ciclosporin drops Diet/supplements – dose omega-3 fatty acids etc Meibomian gland manipulation Meibomian gland probing 	Computer controlled heat and gland expression with LipiFlow	Follow up advice Heated eye pad? Blephex repeat?
B) Water layer deficiency 19%		<ul style="list-style-type: none"> Artificial tears Tear duct blocking Dampening of inflammation steroid drops and/or ciclosporin drops 		Follow up and review
C) Mucin layer deficiency 1%	Refer for treatment as appropriate			Follow up and review

WHAT ARE THE COSTS TO THE PATIENT?

The treatment and a full assessment at one of Dry Eyes Clinic sites would cost £1,200 for both eyes. It should be noted that the costs reflect the expense of the LipiFlow/LipiView equipment, disposables (applicators are single use items), salaries of medical professionals, clinic overheads, partner optometrist's fees and administrative support.

FIGURE 3 The Heated Eye Pad system



HOW DO WE WORK WITH OPTOMETRISTS?

Dry Eyes Clinics are acutely aware that business dictates that patients and customers remain with the referrer, and we agree with that principle. If an optometrist refers to Dry Eyes Clinic, we will ask the optometrists to fill in a referral form and agree to complete the follow up appointment on our behalf. We also request that the costs, suitability and chance of success are discussed prior to referral. Our optometrist partners are compensated for the assessment follow up and are given a full record of the procedure and discussions that have taken place with the patient at the Dry Eyes Clinic. The patient is then returned to the referring optometrist for ongoing care. This enables the referrer to be fully involved with the process and to keep the patient relationship strong. The Dry Eyes Clinic, where appropriate, is able to run treatments at the optometrist's premises. Dry Eyes Clinic believes this model allows the patient quality treatment options led by the local specialist which then helps create

loyalty based on service at the local level. See figure 5 for a simplified care pathway.

Follow up appointments are, in the majority of cases, a straight-forward appointment that can be undertaken by the referring optometrist. On occasions that demand, the Dry Eyes Clinic would undertake follow up appointments and where necessary would advise additional treatment options.

Dry Eyes Clinic is keen to discuss regional partnerships with optometrists to help create a treatment pathway for dry eyes.

- For further information, go to www.dryeyesclinic.co.uk.
- A more detailed care pathway will be published in future

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