



## Blepharitis (Lid Margin Disease)

<p><b>Aetiology</b></p>	<p><b>Anterior marginal blepharitis</b> (also known as Anterior Lid Margin Disease)</p> <ul style="list-style-type: none"> <li>• bacterial (usually staphylococcal) <ul style="list-style-type: none"> <li>- caused by (1) direct infection, (2) reaction to staphylococcal exotoxin or (3) allergic response to staphylococcal antigen</li> </ul> </li> <li>• seborrhoeic (disorder of the ciliary sebaceous glands of Zeis)</li> </ul> <p><b>Posterior marginal blepharitis</b> (also known as Posterior Lid Margin Disease)</p> <ul style="list-style-type: none"> <li>• meibomian gland dysfunction (MGD) <ul style="list-style-type: none"> <li>- bacterial lipases break down meibomian lipids</li> <li>- meibomian secretion becomes abnormal both chemically and physically</li> <li>- tear film becomes unstable</li> </ul> </li> </ul> <p><b>Mixed anterior and posterior marginal blepharitis</b></p> <ul style="list-style-type: none"> <li>• elements of both conditions are present</li> </ul> <p><i>All of these conditions are typically bilateral, and chronic or relapsing</i> A significant association has been found between <i>Demodex</i> mite infestation and blepharitis (see evidence base)</p>
<p><b>Predisposing factors</b></p>	<p>Dry eye disease, present in:</p> <ul style="list-style-type: none"> <li>• 50% of people with staphylococcal blepharitis</li> <li>• 25-40% of people with seborrhoeic blepharitis</li> </ul> <p>Seborrhoeic blepharitis</p> <ul style="list-style-type: none"> <li>• seborrhoeic dermatitis (for example, of the scalp)</li> </ul> <p><i>Demodex folliculorum</i></p> <ul style="list-style-type: none"> <li>• an ectoparasite that occurs normally in the lash follicles</li> </ul> <p>Long-term contact lens wear Ocular rosacea (a cause of posterior marginal blepharitis)</p>
<p><b>Symptoms</b></p>	<p>Blepharitis may be asymptomatic. However, when present, the symptoms of anterior marginal blepharitis, posterior marginal blepharitis and mixed anterior and posterior marginal blepharitis are similar:</p> <ul style="list-style-type: none"> <li>• ocular discomfort, soreness, burning, itching</li> <li>• mild photophobia</li> <li>• symptoms of dry eye including blurred vision and contact lens intolerance</li> </ul>
<p><b>Signs</b></p>	<p><b>Anterior marginal blepharitis (staphylococcal)</b></p> <ul style="list-style-type: none"> <li>• lid margin hyperaemia</li> <li>• lid margin swelling</li> <li>• crusting of anterior lid margin (scales at bases of lashes)</li> <li>• misdirection of lashes</li> <li>• loss of lashes (madarosis)</li> <li>• recurrent styes and (rarely) chalazia</li> <li>• conjunctival hyperaemia</li> <li>• secondary signs include: punctate epithelial erosion over lower third of cornea; marginal keratitis; phlyctenulosis; neovascularisation and pannus; mild papillary conjunctivitis</li> </ul> <p><b>Anterior marginal blepharitis (seborrhoeic)</b></p> <ul style="list-style-type: none"> <li>• lid margin hyperaemia</li> <li>• oily or greasy deposits on lid margins</li> <li>• conjunctival hyperaemia</li> </ul>



## Blepharitis (Lid Margin Disease)

	<p><b>Anterior marginal blepharitis (<i>Demodex</i>)</b></p> <ul style="list-style-type: none"> <li>• lid margin hyperaemia</li> <li>• ‘cylindrical dandruff’: characteristic clear sleeve (collarette) covers base of lash, extending further up lash than flat staphylococcal rosettes</li> <li>• persistent infestation of the lash follicles may lead to misalignment, trichiasis or madarosis</li> </ul> <p><b>Posterior marginal blepharitis (MGD)</b></p> <ul style="list-style-type: none"> <li>• thick and/or opaque secretion at meibomian gland orifices, making it difficult or impossible to express oil by finger pressure</li> <li>• foam in the lower tear film meniscus (due to excess tear film lipid)</li> <li>• plugging of duct orifices with abnormal lipid leading to dilatation of glands and formation of microliths and chalazia</li> <li>• conjunctival hyperaemia</li> <li>• evaporative tear deficiency, unstable pre-corneal tear film</li> <li>• secondary signs include: punctate epithelial erosion over lower third of cornea; marginal keratitis; scarring; neovascularisation and pannus; mild papillary conjunctivitis</li> </ul>
<p><b>Differential diagnosis</b></p>	<ul style="list-style-type: none"> <li>• allergy</li> <li>• Dermatoconjunctivitis medicamentosa (see Clinical Management Guideline on Conjunctivitis Medicamentosa)</li> <li>• Dacryocystitis</li> <li>• parasitic infestation (e.g. <i>Phthirus pubis</i> infestation)</li> <li>• Preseptal cellulitis</li> <li>• Herpes (simplex or zoster)</li> <li>• Meibomian gland carcinoma (usually unilateral)</li> </ul>
<p><b>Management by Optometrist</b></p>	
<p>Practitioners should recognise their limitations and where necessary seek further advice or refer the patient elsewhere</p>	
<p>Non pharmacological</p>	<p>Lid hygiene (consisting of warm compresses, lid massage and lid scrubs) is the first line of management regardless of type of blepharitis</p> <p>Warm compresses to loosen collarettes and crusts in anterior blepharitis and to melt meibum in posterior blepharitis (two to four times daily for 5 to 10 minute intervals).</p> <p>Lid hygiene measures wipe away bacteria and deposits from lid margins, mechanically express the lid glands and lead to improved signs and symptoms in the majority of individuals.</p> <p>Alternative lid hygiene methods:</p> <ul style="list-style-type: none"> <li>• using diluted baby shampoo (1:10) solution with a swab or cotton bud, patient cleans lid margins (but not beyond the mucocutaneous junction). Carry out twice daily at first; reduce to once daily as condition improves. Use firm pressure with swab or cotton bud so as to express glands</li> <li>• commercial products e.g. dedicated lid cleaning solutions or impregnated wipes</li> </ul> <p>Advise the avoidance of cosmetics, especially eye liner and mascara Advise patient to return/seek further help if symptoms persist (GRADE*: Level of evidence = moderate, Strength of recommendation = strong)</p> <p><i>Complete eradication of the blepharitis may not be possible, but long-</i></p>

Blepharitis (Lid Margin Disease)

Version 14, Page 2 of 4

Date of search 24.07.15; Date of revision 18.12.15; Date of publication 05.02.16; Date for review 23.07.17

© College of Optometrists



## Blepharitis (Lid Margin Disease)

	<p><i>term compliance with these measures should reduce symptoms and minimise the number and severity of relapses</i></p>
Pharmacological	<p>Staphylococcal and seborrhoeic blepharitis may benefit from topical antibiotics if not controlled by first line management</p> <ul style="list-style-type: none"> <li>antibiotic ointment (e.g. chloramphenicol) twice daily; place in eyes or rub into lid margin with fingertip</li> </ul> <p>(GRADE*: Level of evidence = low, Strength of recommendation = weak)</p> <p>In patients with posterior blepharitis, systemic antibiotics may be effective as a second line treatment</p> <ul style="list-style-type: none"> <li>consider prescribing a systemic tetracycline, such as oxytetracycline, doxycycline or minocycline (contraindicated in pregnancy, lactation and in children under 12 years; various adverse effects have been reported). Such treatment will need to be continued for several weeks or months and the dosage may need to be varied from time to time.</li> </ul> <p>(GRADE*: Level of evidence = low, Strength of recommendation = weak)</p> <p>Consider <i>Demodex</i> blepharitis if characteristic 'cylindrical dandruff' is present at roots of eyelashes or if blepharitis is refractory to treatment. <i>Demodex</i> mites can be dose-dependently killed by weekly lid scrub with 50% tea tree oil (see evidence base), but this should be undertaken only by experienced practitioners as such preparations are toxic to the ocular surface</p> <p>(GRADE*: Level of evidence = low, Strength of recommendation = weak)</p> <p>Management of aqueous tear deficiency, if also present:</p> <ul style="list-style-type: none"> <li>see Clinical Management Guideline on Tear Deficiency</li> </ul>
Management Category	<p><b>B2:</b> Alleviation/palliation: normally no referral  <b>B1:</b> initial management followed by routine referral if three months of pharmacological therapy does not produce sufficient response  <b>A3:</b> in unilateral cases, if meibomian gland carcinoma is suspected, refer urgently (within one week)</p>
<b>Possible management by Ophthalmologist</b>	
	Microbiological investigations including culture and sensitivity testing
<b>Evidence base</b>	
	<p>*GRADE: Grading of Recommendations Assessment, Development and Evaluation (see <a href="http://gradeworkinggroup.org/toolbox/index.htm">http://gradeworkinggroup.org/toolbox/index.htm</a>)</p> <p><i>Sources of evidence</i></p> <p>Bilkhu PS, Naroo SA, Wolffsohn JS. Randomised masked clinical trial of the MGDRx EyeBag for the treatment of meibomian gland dysfunction-related evaporative dry eye. Br J Ophthalmol. 2014;98(12):1707-11</p> <p>Khairuddin R, Hueber A. [Eyelid hygiene for contact lens wearers with blepharitis. Comparative investigation of treatment with baby shampoo versus phospholipid solution].[Article in German] Ophthalmologe. 2013;110(2):146-53</p> <p>Koo H, Kim TH, Kim KW, Wee SW, Chun YS, Kim JC</p>



## Blepharitis (Lid Margin Disease)

	<p>Discomfort and Demodex: Effect of Tea Tree Oil Eyelid Scrub in Demodex Blepharitis. J Korean Med Sci 2012;27:1574-9</p> <p>Lindsley K, Matsumura S, Hatef E, Akpek EK. Interventions for chronic blepharitis. Cochrane Database of Systematic Reviews 2012, Issue 5. Art. No.: CD005556</p> <p>Zhao YE, Wu LP, Hu L, Xu JR. Association of Blepharitis with Demodex: A Meta-analysis. Ophthalmic Epidemiology 2012;19(2),95-102</p>
--	--

### LAY SUMMARY

Blepharitis is a condition in which chronic (i.e. long-term) inflammation of the eyelid margins causes symptoms of eye irritation. Sometimes there are no symptoms. There are two types of blepharitis, which sometimes occur together:

- Anterior blepharitis, which affects the outside front edge of the eyelids (near or among the roots of the eyelashes).
- Posterior blepharitis, which is also called Meibomian Gland Dysfunction (MGD), results when the condition affects the inside rims of the eyelids (just behind the eyelashes) which contain the meibomian glands. (The meibomian glands produce a thin layer of oil which normally prevents the tears from evaporating too quickly; if they are inflamed, this mechanism does not work properly.)

Antibiotics in the form of eye drops or ointments (and in some cases antibiotics taken by mouth) can potentially provide symptomatic relief and are effective in clearing bacteria from the eyelid margins. Lid hygiene, including warm compresses and diluted baby shampoo applied with cotton buds, or commercial lid cleaning wipes, provides symptomatic relief for the majority of patients with either anterior or posterior blepharitis. However, there is no strong evidence that any of these treatments can completely cure the condition.