

Table 1: Studies on eyelid hygiene products

Author	Year	Country	n	Level of evidence	Wipes				Gels	Pumps				Spray	Solution	Lid Swab	Other	Key findings
					Blephaclean	Cilradex	Ocusoft Original	Ocusoft Plus	Blephagel	Theralid/ Sterilid	Navibief	Ocusoft	Eye Shampoo Long	Avenova	Blephasol	Oust Demodex Swabstix		
Karakurt et al	2018	Turkey	135	2												Blepharitis Shampoo (TTO-free eyelash shampoo), Blefaroshampoo (7.5% TTO eyelash shampoo)	Symptoms (p < 0.001) improved and Demodex mite density reduced (p < 0.001) with the use of the TTO-based shampoo	
Maher et al	2018	United Arab Emirates	40	2							X						Patients on TTO improved in symptoms, signs and tear film stability (p<0.001)	
Thanathaneet al	2018	Thailand	51	2												Saline	Eyelid margin cleaning with normal saline prior to surgery did not decrease bacterial load on ocular surfaces	
Sung et al	2018	New Zealand	43	1						X						Baby shampoo	Ocular symptoms (p=0.04) and signs (p<0.05) (lipid layer, lid wiper epitheliopathy, cylinder collarettes, MMP-9 expression, meibomian gland capping, MUC5AC expression) was better with the use of the eyelid cleanser over baby shampoo.	
Olu et al	2018	Singapore	50	1		X											No difference in live versus online video for patient instruction of terpenoid-impregnated eyelid wipes	
Murphy et al	2018	Ireland	86	1								X				Dr Organic Tea Tree Face Wash	Demodex density was reduced (p>0.05) using three methods (tea tree face wash, lid scrubs and microblepharoplasty) for 4 weeks with no difference between the methods (p<0.1)	
Ngo et al	2018	Canada	25	1		X		X	X				X		X		Short term comfort of eyelid hygiene products intended for Demodex management differs amongst products and may benefit from more patient instruction	
Garcia et al	2018	United States	42	1												Baby shampoo, Povidone iodine, Isopropyl alcohol	Baby shampoo achieved comparable reduction in the bacterial load of eyelid skin as compared to povidone iodine or isopropyl alcohol prior to ocular surgery	
Stroman et al	2017	United States	36	2									X				Hypochlorous acid hygiene solution reduces the bacterial load (>99% staphylococcal load) without altering the diversity of bacterial species on the lower lid	
Lee et al	2017	South Korea	32	2										X			Mechanical meibomian gland squeezing combined with eyelid scrubs and warm compresses improves symptoms and signs (TBUT, corneal and conjunctiva staining, meibum quality and expressibility)	
Kaldo et al	2017	Japan	31	2												Ofloxacin ointment	Symptoms and signs (vascular engorgement, meibum dandruff-like debris, corneal staining, tear film stability) improved with the use of the ointment for 3 months	
Kobayashi et al	2016	Japan	10	2									X				eyelid hygiene with the product improves lid margin and symptoms of dry eye in MGD patients and increases eyelash length	
Peral et al	2016	Spain	45	2	X												Eyelid and conjunctival microbiota were reduced (p=0.0011) with the wipes prior to ocular surgery	
Makornwattana, Sontichai	2016	Thailand	32	2							X					Bifesta	No difference in eyelid hygiene after false eyelash removal with either water or test product (p=0.32)	
Hirsch-Hoffman	2015	United States	96	3							X						Lid hygiene was recommended for Demodex blepharitis patients with additional management options (TTO 5%, 0.02% TTO; metronidazole 2%; oral ivermectin; oral metronidazole) for 2 months, however none proved to be clearly effective.	
Arrua et al	2015	Paraguay	45	2													Signs and symptoms improved in all 3 treatment groups (shampoo; shampoo plus topical metronidazole; shampoo plus neomycin, polymyxin, dexamethasone), with the first 2 groups showing more improvement in all variables studied (p<0.05)	
Ali et al	2013	Sweden	120	1												0.5% chlorhexidine, 70% ethanol	Preoperative eyelid chlorhexidine alcohol wash did not demonstrate an added benefit in reducing bacterial counts in the conjunctiva when it was rinsed preoperatively with chlorhexidine solution, however it may be of some marginal help in reducing bacterial contamination of the operation field.	
Koo et al.	2012	Korea	106	2													Demodex density showed a positive correlation with age and subjective ocular discomfort. The TTO eyelid scrub was more effective at reducing Demodex counts (p=0.004) and improving subjective ocular symptoms	
Guillon et al	2012	United Kingdom	40	2	X												Improved decrease in contamination of eyelashes and meibomian gland blockage (p<0.001) at 3 weeks. Decrease in eyelid margin staining observed at 3 months.	
Guillon et al	2012	United Kingdom	40	2	X												Improved symptoms and comfort (p<0.001) with use of wipes with a regimen of twice a day X 3 weeks followed by a maintenance of once a day.	
Doan S	2012	France	56	2					X								Good tolerability and acceptability of the test product was rated over a 21 day use. Changes in acuity and tear film stability were non-significant	
Bekibele et al	2010	Nigeria	80	2												5% povidone iodine, Savlon	Povidone (p = 0.001) and Savlon (p = 0.004) are effective in reducing periocular bacteria in an African setting. Prior face washing with soap and water had no added benefit.	
Gao et al	2007	United States	11	2												TTO	Lid scrub with TTO can effectively reduce ocular Demodex and result in subjective and objective improvements.	
Gao et al	2005	United States	9	2												50% TTO, baby shampoo	TTO's in vitro killing effect on Demodex was dose dependent. Lid scrub with 50% TTO, but not with 50% baby shampoo, can further stimulate Demodex to move out to the skin.	
Romero et al	2004	United States	37	2												Salt water	Lid hygiene and preservative-free artificial tears significantly improved tear breakup time and relieved symptoms of MGD	
Key, JE	1996	United States	25	2												X	Slit lamp findings (hyperemia, corneal staining, lid alteration, crusting) and symptoms improved over 4 months with eyelid hygiene with soap, diluted baby shampoo or commercial lid scrub, with patient preference for the later for convenience and use.	
Avisar et al	1991	Israel	20	3													I-scrub	Reduction in symptoms and severity of clinical signs
Nelson et al	1990	United Kingdom	40	2													2% ketoconazole cream	Ketoconazole was no better than placebo at improving the symptoms of blepharitis.