Manuka Honey To Treat Dry Eye Syndrome and Meibomian Gland Dysfunction

What Is Dry Eye Syndrome (DES) and Meibomian Gland Dysfunction (MGD)?

Dry eye syndrome (DES) is a condition in which there is a deficiency in the quality or quantity of tears. DES is a common problem that affects millions of people in the United States. The condition is often caused by meibomian gland dysfunction (MGD), which is a condition in which the meibomian glands in the eyelids do not produce enough oil. This can lead to a lack of lubrication and tear film stability, which can cause the eyes to become dry and irritated. Symptoms of DES can vary from person to person, but may include eye irritation, redness, a burning sensation, blurred vision, and a feeling of heaviness in the eyes. DES can also lead to complications such as cataracts, glaucoma, and infection. There is no cure for DES, but there are treatments that can help relieve symptoms. Treatments may include artificial tears, ointments, and plugs that are inserted into the tear ducts to help keep the eyes moist. MGD can often be treated with warm compresses, lid scrubs, and prescription medications.

According to a 2019 study, [1] MGD affects an estimated 35% of the population in the US and worldwide. MGD affects people of all ages but is more prevalent in older adults. Men are more prone to MGD than women in general. Another study of risk factor noted increased severity of MGD with aging, and higher risks associated with hypertension, diabetes, higher levels of LDL cholesterol, and in post-menopausal women. This study [2] concludes that blood sugar, blood pressure, and blood cholesterol were all correlated with risk and should be kept within normal

ranges as a mitigation strategy. The exact cause of MGD is unknown, but it is thought to be due to a combination of factors, including genetics, environmental factors, and eyelid inflammation.

Manuka Honey vs. Meibomian Gland Dysfunction (MGD)

Two different studies related to Manuka Honey and MGD were conducted in 2017 and 2021. Researchers in each case conducted clinical trials to test the use of Manuka Honey eye drops on patients suffering from MGD. The aim of the 2017 study [3] was “to evaluate the efficacy of standardized Manuka (Leptospermum species) antibacterial honey as adjunctive twice daily treatment to conventional therapy (warm compresses, lid massage and preservative-free lubricant), in participants with evaporative dry eye due to moderate to advanced meibomian gland dysfunction.”

This study included 114 participants in 3 groups. The first group used Optimel™ Manuka honey eye gel, the second group used Manuka honey Optimel™ eye drops, and the third was a control group using conventional therapies. All three groups showed improvements. Differences between groups included, “Improvement in staining was significantly greater with Optimel 16 per cent drops ($p = 0.035$). Significant improvements ($p < 0.05$) in meibomian gland expressibility and InflammaDry occurred for both Optimel™ treatments. Optimel™ 98 percent gel was significantly more effective in improving meibum quality ($p = 0.005$) and gland expressibility ($p = 0.042$). Total eyelid marginal bacterial colony counts reduced significantly with Optimel™ 16 per cent drops ($p = 0.03$) but not the other treatments. Staphylococcus epidermidis counts reduced significantly with Optimel™ 16 percent drops ($p = 0.041$) and Optimel™ 98 percent gel ($p = 0.027$). Both Optimel™ treatments significantly reduced the need for lubricants, with Optimel™ 16 per cent drops decreasing lubricant use most ($p = 0.001$). Temporary redness and stinging were the only adverse effects of Optimel™ use.”

The 2021 study [4] involved a double-masked, randomized, vehicle-controlled, parallel-group, prospective study, involving 55 subjects with MGD (defined as a Tear Break-up Time (TBUT) of less than 10 seconds, a grade of ocular surface staining equal to or greater than 2, a grade of meibomian gland secretion equal to or greater than 2 and the presence of meibomian gland plugging. Subjects were randomly assigned to daily application of honey or vehicle for 4 weeks. The primary outcome measure was the change in Ocular Surface Disease Index (OSDI) score. Secondary outcome measures were the changes in TBUT, corneal staining, meibomian gland secretion and plugging, blink rate and tear secretion.

The study results showed that “Patients in the conventional treatment group demonstrated minimal difference in SPEED score at 3-week follow-up (mean difference 1.087, p=0.183), which was not statistically significant. However, measurements of tear film break-up time, corneal surface stain (Oxford), lid margin, conjunctival redness, as well as meibum quality and expressibility showed significant improvements at 3 weeks ($p<0.01$). Patients in the manuka honey eye-drops group showed significant difference after 3 weeks in SPEED score (mean difference 2.53, p=0.006), as well as in lid margin redness, conjunctival redness, corneal surface stain (Oxford), and meibum quality and expressibility (p=0.000)”.

The study concluded “Optimel™ 16% manuka honey eye-drops showed significant improvement in symptoms and objective signs in meibomian gland dysfunction and concluded that these eye-drops are an effective alternative treatment for meibomian gland dysfunction.

How To Use Manuka Honey To Treat Meibomian Gland Dysfunction (MGD)

To use Manuka honey eye drops to treat MGD, you should follow the manufacturer's recommendations. Melcare is an Australian-based company that manufactures the eye drops and gel used in these two studies. Their products are readily available on Amazon and through retail stores. Both studies indicate the anti-inflammatory and antibacterial properties of the honey will help to reduce inflammation and bacteria in the Meibomian glands, helping to improve their function.

Note on content creation: Some of the content of this article was generated using an AI model to respond to prompts and provide general information on the subject. Text that comes directly from studies is shown in quotations and found in context of the hyperlinked study which is also cited at the end of the article.

Disclaimer - Bees & Trees frequently shares publicly available scientific and medical research regarding Manuka Honey. We are not medical professionals and the content of our emails, articles, or website postings should not be construed as medical advice.

[Click here to purchase Bees & Trees honey]
[Click here to learn more about Bees & Trees]

MĀNUKA HONEY
BEES & TREES
NEW ZEALAND

Appendix

Research related to MGD and DES in this article

1. Hassanzadeh S, Varmaghani M, Zarei-Ghanavati S, Heravian Shandiz J, Azimi Khorasani A. Global Prevalence of Meibomian Gland Dysfunction: A Systematic Review and Meta-Analysis. Ocul Immunol Inflamm. 2021 Jan 2;29(1):66-75. doi: 10.1080/09273948.2020.1755441. Epub 2020 Jun 26. PMID: 32589483.
2. Tulsyan N, Gupta N, Agrawal N. Risk Factors Associated with Meibomian Gland Dysfunction: A Hospital Based Study. Nepal J Ophthalmol. 2021 Jan;13(25):59-64. doi: 10.3126/nepjoph.v13i1.30605. PMID: 33981098.
3. Julie M Albietz & Katrina L Schmid (2017) Randomised controlled trial of topical antibacterial Manuka (Leptospermum species) honey for evaporative dry eye due to meibomian gland dysfunction, Clinical and Experimental Optometry, 100:6, 603-615, DOI: 10.1111/cxo.12524
4. Li AL, Li SL, Kam KW*, et al* Randomised assessor**-**masked trial evaluating topical manuka honey (Optimel) in treatment of meibomian gland dysfunction *British Journal of Ophthalmology* Published Online First: 08 January 2021. doi:10.1136/bjophthalmol-2020-317506