

## What is Demodex?

Demodex is a genus of tiny parasitic mites that live in or near hair follicles of mammals. Around 65 species of Demodex are known. The two species that have been identified living on humans are: *Demodex folliculorum* and *Demodex brevis*, and are often referred to as eyelash mites.

The two two main types of Demodex mites found on humans are:

1. ***Demodex folliculorum*** – first described in 1842, *D. folliculorum* is found in hair follicles.
2. ***Demodex brevis*** – first described in 1963, *D. brevis* lives in sebaceous glands connected to hair follicles.

Both species are primarily found in the face, near the nose, the eyelashes, and eyebrows, but also occur elsewhere on the body.

Adult mites are typically 0.3-0.4 mm long with *D. brevis* slightly shorter. Demodex are semitransparent and have an elongated body that consists of two fused segments. Eight short, spider-like segmented legs are attached to the first body segment. The body is covered in scales for anchoring itself in the hair follicle. They have pin-like mouthparts for eating skin cells and oils (sebum), which accumulate in the hair follicles. The mites are more active at night, as they try to avoid light. Mating takes place in the follicle opening, and eggs are laid inside the hair follicles or sebaceous glands. Larvae hatch after three to four days and develop into adults in about seven days. Total lifespan of Demodex mites can be several weeks.

Infestations with Demodex are common. A 2010 study published in *Investigative Ophthalmology & Visual Science*, found 70% of the patients had Demodex with no significant difference in the prevalence between males and females. The study also found a strong correlation between the number of Demodex and the severity of ocular discomfort, suggesting that Demodex plays a pathogenic role in ocular discomfort linked with aging.

### How to Treat Demodex

There are numerous studies that have shown that tea tree oil can help reduce the populations of Demodex mites; however, the oil can be toxic and irritating if placed near the eye. In 2013, a study was published in *Translational Vision Science & Technology* that proved that the isolated constituent, 4-Terpineol (T4O), which is found in tea tree oil, was the most effective at eradicating Demodex mites, and at a concentration that is non-irritating to the human eye and skin. Make up should be discarded and bought fresh if you have been diagnosed with blepharitis. Also, keeping pets away from sleeping surfaces and frequent washing of bedding and pillowcases is important to ensure best results.

