

### THE CONDITION

Dry eye syndrome is caused by a combination of decreased tear production (aqueous tear deficiency) and meibomian gland dysfunction (evaporative dry eye). Symptoms of dry eye syndrome include: redness, irritation and/or foreign body sensation, redness, itching, tearing, light sensitivity, and blurry vision.

Approximately 86% of dry eye symptoms are caused by meibomian gland dysfunction, where the oil glands next to the eyelashes become clogged, producing a thickened, toothpaste-like secretion. This contributes to an unstable outer layer of the tear film, causing tears to evaporate more quickly and leading to the typical symptoms of dry eye syndrome.

In addition to conventional over-the-counter and prescription medication treatments, more recent advanced treatment options focus on addressing meibomian gland dysfunction with Intense Pulsed Light (IPL) and Radiofrequency (RF) procedures. These treatments aim to improve the function of meibomian glands by stimulating and unclogging them, allowing the normal oils to be produced and reducing evaporation of the tear film.

### WHAT IS IPL?

IPL therapy uses bursts of light energy to treat several skin conditions. It has more recently been shown to be effective in treating dry eye syndrome<sup>1</sup>. The pulses of light break down blockages in the meibomian glands and reduce inflammation by targeting the surrounding blood vessels. This allows production of the healthier oils which are part of the outer lipid layer of the tear film. This, in turn, helps to improve tear film stability and reduce dry eye symptoms.

The IPL procedure involves applying light pulses to the skin around the eyes using a handheld device. It may be performed in the doctor's office and takes fifteen to thirty minutes per session. Treatment sessions may be spaced a month apart.

### WHAT IS RF?

RF therapy has been used for years in dermatology and cosmetic practices to tighten the skin around the eyes and reduce fine lines and wrinkles, primarily due to its ability to stimulate growth of collagen. Unlike some other procedures, it is safe on all skin types and has no post-procedural restrictions. Recent research supports a role in RF therapy alleviating symptoms related to dry eye syndrome<sup>2</sup>. The heat provided by RF therapy improves meibomian gland function by melting the thickened secretions within these oil glands and improving the stability of the tear film. It also helps to reduce surrounding inflammation which contributes to dry eyes.

RF uses the energy of electrical waves to gently heat the deep layers of the skin (dermis). A hand-held wand gently heats and massages the treatment area, stimulating the body's own natural production of collagen and elastin fibers. Over several minutes, the electrical signal will heat and melt the clogged meibomian glands, improving the flow of oils to your tear film and reducing inflammation that contributes to dry eye symptoms.

### IS IPL OR RF BETTER FOR DRY EYES?

Both IPL and RF treatments offer a significant benefit for dry eye patients over conventional treatments:

- Both therapies use a non-invasive approach
- Both address the root cause of the condition rather than treating just the symptoms
- Both procedures aid in stabilization of the tear film
- Both have minimal side effects with no downtime following the procedure

IPL therapy is known for its ability to break down abnormal blood vessels and inflammation surrounding the meibomian glands effectively, while RF therapy is touted for unclogging the glands and boosting the body's natural healing process. In addition, both are effective procedures in treating the delicate skin around the eyes. In the

past, choosing between the two options came down to the type of procedure that is offered, if at all, at an individual's eye care provider.

Dr. Nemi and the team at Lotus Vision have intensively studied these technologies throughout the years and finally there is the opportunity to provide both IPL and RF treatments together thanks to Envision by InMode.

### HOW DOES ENVISION BY INMODE WORK?

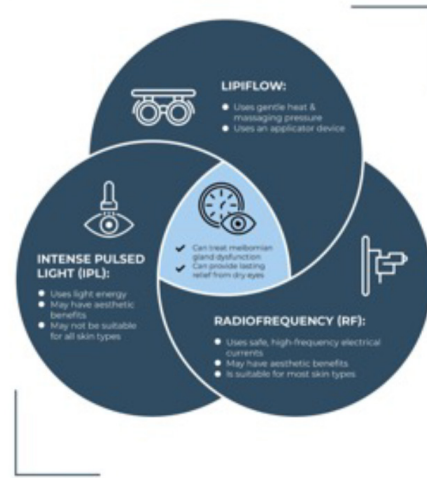
Envision by InMode is an innovative device designed to deliver both IPL and RF treatments. This dual approach allows for a more comprehensive treatment of dry eye syndrome since Dr. Nemi addresses the pathology in the meibomian glands and surrounding tissue simultaneously.

During a treatment session, you may feel a warm sensation as the device delivers light pulses and radio waves to the eyelid treatment area. The feeling may resemble that of a warm stone massage. This procedure is performed in approximately fifteen to thirty minutes with no discomfort and no downtime in the recovery period. While an improvement in symptoms may be noted after just one treatment, multiple sessions spaced a month apart are often recommended for optimal results.

### RECOVERY

Individuals may resume their daily activities with no downtime. The eyes may be slightly red upon leaving the office, but this resolves within a few hours. The patient should keep the treatment areas moisturized and avoid sun tanning for 24 hours. It is a low-risk procedure that is safe to perform on all skin-types. Individuals are instructed to continue their existing dry eye treatment regimen and follow-up with the physician as directed.

LipiFlow vs. IPL vs. Radiofrequency



ADDITIONAL NOTES:

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<sup>1</sup> Dell SJ. Intense pulsed light for evaporative dry eye disease. *Clin Ophthalmol.* 2017;11:1167-1173; <https://doi.org/10.2147/OPHTH.S139894>

<sup>2</sup> Paul S, Cohen A, Parsa K, et al. Transcutaneous radiofrequency-mediated meibomian gland expression is an effective treatment for dry eye: a prospective cohort trial. *Open Ophthalmol J.* 2023; doi: [10.2174/18743641-v17-e230328-2022-63](https://doi.org/10.2174/18743641-v17-e230328-2022-63)