

Relief

Goggles plus new gel pads improve dry eye, nocturnal lagophthalmos symptoms

Devices can help protect the ocular surface, provide patients with better night's sleep

New Product Focus

By Lynda Charters

Reviewed by Robert Latkany, MD

New York—Two innovative products for patients with dry eye have been shown to be successful anecdotally. The Tranquileyes Eye Hydrating Therapy Goggles and new Thermoeyes, both products of the company eyeeco, relieve symptoms for many patients with dry eye and nocturnal lagophthalmos. Robert Latkany, MD, uses these products in his practice and is conducting research to determine their true potential.

The Tranquileyes Goggles, which became available about 4 years ago and is the first moisture chamber that is commercially available, are designed to treat patients who have nocturnal lagophthalmos. "Some studies have shown that about 5% of the population sleep with their eyes open. However, my research has found that closer to 10% to 15% of the population sleep in that manner," Dr. Latkany said. He recently published his findings in the journal *Ocular Surface* (2006;4:44-53) and is continuing his research to pinpoint the prevalence of nocturnal lagophthalmos more accurately.

Considering these percentages, even conservatively, 5% of the population translates to a large number of individuals, he pointed out.

"The goggles are essentially for those individuals who sleep with their eyes open. Not all of these patients complain of symptoms, that is, morning ocular surface dryness, difficulty sleeping, blurry morning vision, and ocular irritation and redness, but there seem to be individuals who are over age 40 with coexisting con-



Figure 1 Tranquileyes Eye Hydrating Therapy Goggles and the new Thermoeyes can be used to relieve symptoms for patients with dry eye and nocturnal lagophthalmos.

ditions—an existing dry eye condition and sleeping with their eyes open. These patients report miserable nights of sleep and morning irritation that usually resolves after a hot shower," Dr. Latkany explained. He is in private practice in New York, and is an associate adjunct surgeon, New York Eye and Ear Infirmary, Manhattan, and assistant professor, New York Medical College, Valhalla.

Interestingly, the eyes need only be open as little as 1 mm during sleep to cause these symptoms, according to Dr. Latkany. With these patients, the goggles have the potential to provide patients with a better night

of sleep and protection of the ocular surface.

"With only 1 mm of opening, the ocular surface dries out, scratch marks form, and an inflammatory response develops," he said.

Impervious to light, air

Patients who use the goggles sleep with them on throughout the night. The goggles, Dr. Latkany explained, form a 360° seal that is impervious to light and air. A real advantage of the goggles, which are similar to a swim goggle but soft, is that there is a sponge that can be soaked in warm water within the socket of each eyepiece. The extra moisture within the chambers of the goggles creates an environment that is similar to sleeping with the eyes fully closed.

"The goggle does not make the patient close his or

Take-Home Message

Two innovative products for patients with dry eye have been shown to be successful anecdotally. The Tranquileyes Eye Hydrating Therapy Goggles and new Thermoeyes, which provides both heat and cold therapy (eyeeco), relieve symptoms for many patients with dry eye and nocturnal lagophthalmos.

her eyes, but it provides the next best environment, as if the patient is sleeping in a sauna," he said. The humidity level has been measured to be as high as 60%.

The patient response to this product has been very positive, with some patients claiming that the goggles have changed their lives, providing a much better quality of life, Dr. Latkany said.

He also noted that the goggles are not the answer for all patients and the goggles are not a cure for dry eye. However, the product allows patients to start the day with a less irritated, healthier ocular surface. One downside is that some patients have reported a reaction to the foam lining the goggles.

Suzanne Paulson, CEO and founder of eyeeco, pointed out that "the benefits for patients with lagophthalmos extend well beyond the effects of hydration because of the added effects of protection and shelter. The cornea can be protected from the drying effects of fans or vents and the environment when the surface is so vulnerable."

She also commented on the response to the product in the marketplace.

"In addition to the benefits in lagophthalmos, for patients with chronic dry eye this product provides the physician with one more therapy to provide relief for these patients," Paulson said.

"Dry eye can be a very frustrating condition to treat because many patients exhaust all therapies without finding relief. For these patients who are in so much pain, the Tranquileyes Goggles have been able to provide a level of relief that improves their comfort over the existing treatments alone."

Other advantages are that the patient has complete control over the therapy and can use it as often as desired, the product does not require a prescription, and it is highly therapeutic.

The biggest advantage she sees is the opportunity for patients to take care of their eyes as they might their skin on a daily basis.

"For patients who experience ocular irritation from computer work or contact lens wear, for example, that is not yet a chronic

problem, being able to care for the eyes in a moisture-rich environment is so compelling and may prevent the problem from becoming chronic," she emphasized.

An adjunct to goggles

Thermoeyes, a new product that became commercially available in July 2006, is an adjunct to the goggles. It is a gel pad with small stainless steel disks inside that basically acts as a heat pad when snapped. This foam, which caused a sensitive reaction in some patients, has been eliminated from the device. When the Thermoeyes is tucked inside the Tranquileyes Goggles, the humidity level at 1 hour was 83.5%, according to Dr. Latkany.

In addition to heat therapy, Thermoeyes also can provide cooling relief. After the gel pads have been in the freezer for about 15 minutes, they can be inserted into the goggles to reduce puffiness around the eyes and alleviate sinus and migraine headaches. The device is convenient for use during the day for 30 to 45 minutes as well as for nighttime therapy.

This product can be used with patients who have nocturnal lagophthalmos. Dr. Latkany is also conducting research to determine if patients who have blepharitis, meibomian gland dysfunction, or rosacea might benefit from this therapy.

"I want to determine if the product will close the eyelid in a mini moist chamber but also if it will clean the eyelids. Lid hygiene with baby shampoo is the typical therapy for meibomian gland dysfunction and blepharitis. Regardless of the cleaning technique, the element in common is heat. Heat will loosen the glands, so that the cleaning process will be facilitated and perhaps the gland will function better. Thermoeyes, while not a novel therapy, is a novel delivery system," Dr. Latkany explained.

He reported that because the product is so new he has used it with only a few patients; however, Thermoeyes appears to be beneficial.

"For patients with just nocturnal lagophthalmos, the goggles are a good therapy; if we close the eye we are taking a big step in



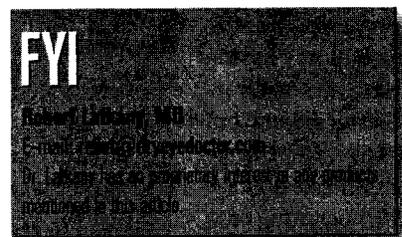
'The goggle does not make the patient close his or her eyes, but it provides the next best environment.'

Robert Latkany, MD

treating dry eye. However, for those with blepharitis or meibomian gland dysfunction, Thermoeyes might prove to be fantastic," he stated.

Paulson emphasized the importance of using Thermoeyes immediately upon arising to begin tear production as well as right before going to bed.

Both Thermoeyes and the Tranquileyes Goggles can be found on the manufacturer's Web site at www.eyeco.com and in many opticians' offices. When physicians refer patients to the company Web site, the patients receive a 15% discount and 15% is donated directly to the Sjögren's Syndrome Foundation, according to Paulson. **OT**



Focal Point

The goggles have the potential to provide patients with a better night of sleep and protection of the ocular surface.