Contact Lenses with a Lubricated Layer for Enhanced Wetness and Comfort

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Technology description

Contains a Non-ionic Polymer Film on the Lens Surface that Provides Additional Relief from Dryness and Irritation in the Eyes

This contact lens features a wettable and slick surface that maintains moisture and increases comfort when worn. In spite of the continuous improvements in lens design, a large percentage of contact lens users experience at least some form of dryness and discomfort, particularly towards the end of the day. This experience is also the leading cause of new contact lens wearers dropping out of the market. Primary efforts to reduce dryness and discomfort involve introducing substances that lubricate and wet the lenses. However, the incorporation of wetting and comfort agents by available technologies has not fully relieved the experience of discomfort and dryness for a large number of patients. Researchers at the University of Florida have developed a simple scalable contact lens design that uses a highly lubricious surface layer to reduce friction between the lens and eyelid and produce a stable tear film. With these features, these contact lenses reduce eye dryness and discomfort to a higher degree than available lenses.

Technology

The creation of this contact lens involves adding a thin film of a non-ionic polymer (polyDMA) onto the lens surface. The silicone hydrogel body of the lens remains unaffected by the presence of the polymer film. Since the polymer film is hydrophilic, the modified contact lens with a thin a layer of the film on its surface achieves very large improvements in wettability and lubricity. Thus, these lenses provide greater comfort to users, especially those requiring relief from end-of-day dryness and irritation.

Application area

Non-ionic polymer film coated contact lenses with a highly lubricous surface that are more comfortable on the eye

Advantages

Reduces irritation and dryness in eyes, making contact lenses more convenient to wear and potentially lowering the number of dropouts in contact lens wearers
Adapts to improve the comfort and wetness of any commercial contact lens, lowering costs necessary for lens improvement

Institution

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