

# CORNEA AND EXTERNAL EYE DISEASES

## THE ROLE OF PUNCTAL PLUGS IN OPHTHALMOLOGY

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**Introduction:** Lacrimal punctal occlusion has been widely used for the safe and effective treatment of various types of dry eye disease (DED). Punctal plugs mechanically block tear drainage thus, preserving natural tears on the ocular surface and prolonging the effect of tear substitutes.

**Aim/Purpose:** To present our 15-year experience of the use of lacrimal punctal plugs with broadened indications for the treatment of various ocular diseases and conditions.

**Methods:** In our practice we have been using lacrimal punctal plugs implantation not only for the treatment of the DED that cannot be controlled by the artificial tears instillation alone, but for the prevention of exacerbation of the disease following corneal refractive surgery. In patients undergoing premium IOL implantation following phacoemulsification, we usually perform punctal plug implantation as a first step to avoid any refractive surprises during IOL calculation and to achieve satisfactory quality of vision post-surgery. With the COVID-19 pandemic, the possibility of the infection transmission through the naso-lacrimal duct to the upper respiratory tract has been considered. Hence, blocking the tear drainage by implanting temporary punctal plugs can stop the spread of coronavirus from the eyes to the lungs. The indications for the use of punctal plugs are expanding and they can be successfully used as drug-delivery systems for the treatment of various chronic ophthalmic pathologies (glaucoma, uveitis, ocular inflammation following ophthalmic surgery).

**Results:** Punctal plug implantation not only improves the symptoms of the DED, but also the quality of vision. Although, most of the patients experience transient epiphora following the procedure, this resolves within a few days. In cases when punctal plugs are used as the COVID-19 prevention measures, short-term accumulation of the natural tear on the ocular surface can serve as the beneficial factor prolonging the time of interaction of tear antimicrobial agents and the virus. We recommend that all the healthcare workers, who are at high risk of contracting COVID-19, should undergo implantation of lacrimal punctal plugs as a preventive measure.

**Conclusion:** Although a wide variety of punctal plugs are available differing from each other in their design and absorbability, we always use customized approach in each case taking into account patient's condition and individual preferences. The procedure of punctal plug implantation being easy and painless makes it appealing not only to the ophthalmologists but to the patients as well, who report improvement of subjective feeling of ocular discomfort and reduced frequency of artificial tear instillation.