POSSIBILITIES IN PRODUCTION OF 3D PRINTED CONTACT LENSES

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Abstract

Contact lenses have been used and manufactured for decades now, but recently 3D printing technologies were introduced as a new way of production. As a rapidly developing technology, 3D printing offers new possibilities for development and advantages in the manufacturing process of lenses, due to easy customization and geometry modelling. Standard production is not leaving much space for individual demands, concerning different ophthalmic diagnoses and unique patients' eye characteristics. In this paper, the main emphasis is on the further development of the design and characteristics of lenses fabricated by this technology that can satisfactorily overcome the drawbacks of production approaches used until now. Areas of possible improvements are significant, meeting the individual demands of patients, customizing needed parameters for better therapy, biocompatibility, the possibility to integrate different optical sensors for diagnostics, even making the smart lenses, etc. There are a very limited number of studies dealing with 3D printing and examination of printed contact lenses, which leads to the conclusion that this is the research area of the future.

Keywords

Contact lenses, 3D printing, customization, production.

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