

R1 R2 R3 PG0 PG1 Estagiário Tecnólogo
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Service (sector) Refractive Surgery N° CEP

**PROTEOGLYCAN SYNTHESIS AFTER REFRACTIVE SURGERY
COMPARING TWO TECHNIQUES: LASER IN SITU KERATOMILEUSIS
(LASIK) AND PHOTOREFRACTIVE SURGERY (PRK)**

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Purpose: The objective of the present study is to evaluate the effects of corneal refractive surgery upon PG biosynthesis, using two different techniques: LASER in situ keratomileusis (LASIK) and photorefractive keratectomy (PRK). PRK, which consists in epithelial removal and laser application, is an effective procedure for the correction of low and moderate myopia, and LASIK, an intrastromal procedure that maintains the integrity of the Bowman's membrane and overlying epithelium, is effective to treat a wide range of refractive errors. Methods: Human corneas that were rejected for transplants were obtained at Banco de Olhos do Hospital São Paulo. For each eye pair, one cornea was submitted to refractive surgery and the other was used as matched control. After surgery, the corneas are excised from the eyes and immediately placed in Ham F-12 nutrient mixture supplemented with ³⁵S-sulfate (100 mCi) for the metabolic labeling of PGs. After 24 h incubation at 37°C in 2.5% CO₂ atmosphere, PGs are extracted by 4 M GuHCl and identified by a combination of agarose gel electrophoresis, autoradiography, immunoblotting, and enzymatic degradation with protease and specific mucopolysaccharidases. Results: Our results indicate a marked decrease in ³⁵S-sulfate incorporation in PGs after refractive surgery after LASIK. PRK had a variable effect upon PG biosynthesis; in some cases, the synthesis doesn't change, in others cases the synthesis increased, and in others, it decreased. Conclusion: The decrease in ³⁵S-sulfate incorporation in PGs after LASIK and the variation upon PG corneal synthesis obtained after PRK are now under investigation.