

R1 R2 R3 PG0 PG1 Estagiário Tecnólogo
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Service (sector) Contact lenses - REFRACTIVE SURGERY N° CEP

**PROTEOGLYCAN SYNTHESIS AFTER LASER IN SITU
KERATOMILEUSIS (LASIK) AND PHOTOREFRACTIVE KERATECTOMY
(PRK)**

Martins, S.A.R; Berto, A.G.A.; Aguiar, J.A.K.; Soriano, E.S., Michelacci, Y.M, Campos, M. **Purpose:** The objective of the present study was to evaluate the effects of corneal refractive surgery using two different techniques, Laser *in situ* keratomileusis (LASIK) and photorefractive keratectomy (PRK), upon proteoglycan (PG) biosynthesis. **Methods:** Human corneas that were rejected for transplants were obtained at Banco de Olhos of Hospital São Paulo. For each eye pair, one cornea was submitted to refractive surgery, and the other was used as its matched control. After surgery, the corneas were excised from the eyes and immediately placed in Ham F-12 nutrient mixture containing ³⁵S-sulfate for the metabolic labeling of PGs. After 24 h incubation at 37° in 2.5% CO₂ atmosphere, PGs were extracted by 4 M GuHCl and identified by a combination of agarose gel electrophoresis, and enzymatic degradation with protease and specific mucopolysaccharidases. Histology and Immunofluorescence are now been used to study the cellular component. **Results:** Our results indicate a marked decrease in ³⁵S-sulfate incorporation in PGs after refractive surgery by LASIK, possibly as a consequence of stromal cell death. PRK had a variable effect upon PG biosynthesis: the incorporation rate increased, decreased or did not change. This may be a result of two or three combined events. The epithelial removal leads to a higher incorporation rate of ³⁵S-sulfate in PGs, possibly due to an increased availability of ³⁵S-sulfate and stimulation of superficial keratocytes; the corneal ablation, on the contrary, could induce cell death. **Conclusion:** LASIK caused a decrease in ³⁵S-sulfate incorporation in PGs; PRK caused a

Variable effect in ³⁵S-sulfate incorporation upon PGs biosynthesis.