

## **Cataract inhibitors: Present needs and future challenges**

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### **Abstract**

Cataracts result from opacification of the ocular lens and represent the leading cause of blindness worldwide. After surgical removal of the diseased lens material and implantation of an artificial intraocular lens, up to 50% of cataract patients develop a secondary lens defect called posterior capsular opacification (PCO). While vision can be restored in PCO patients by a laser-mediated capsulotomy, novel therapies involving inhibition of aldose reductase are now being developed to prevent PCO development and complications of laser capsulotomy. A question we wished to address was whether cataract surgeons believe there is an unmet need for a preventative PCO therapy, whether they would prescribe such a therapy were it available, and to assess their perceptions regarding the benefits of and obstacles to adopting novel PCO therapies in the place of laser capsulotomy. We gathered perspectives from adult, pediatric, and veterinary cataract surgeons using an online questionnaire. From 161 surgeon responses, we found that the majority of adult, pediatric, and veterinary cataract surgeons (78% n = 35, 88% n = 37, and 96% n = 71 respectively) believed there is an unmet need for preventative PCO therapy, with more than 95% expressing interest in incorporating such therapy into surgical protocols. Perceived benefits included optimizing visual outcomes, avoiding the need for additional procedures, eliminating complications related to neodymium:yttrium-aluminum-garnet laser, preserving the posterior capsule particularly in patients receiving multifocal intraocular lens implants, providing a viable solution for PCO in animals, and using it in developing countries that lack access to neodymium:yttrium-aluminum-garnet lasers. Perceived obstacles included potential lack of reimbursement by insurance companies, and the need for strong efficacy and safety profiles. Among adult surgeons, 70% (n = 31) indicated that preventative PCO therapy could add value to premium intraocular lens packages. Our studies revealed that cataract surgeons overwhelmingly support the development of preventative PCO therapy, and that clinical trials will play a critical role to test the safety and efficacy of specific therapeutic agents.