



VISION FOR A BETTER FUTURE

THANKS TO BRANDAN'S EYE RESEARCH FUND, SICKKIDS IS IMPROVING THE LIVES OF CHILDREN WITH EYE AND VISION DISORDERS.

Brandan's Eye Research Fund enables SickKids clinicians and scientists to support new discoveries, and continue to find new cures for disorders and diseases that cause vision loss. We are pleased to report on the recent projects you have made possible.

PROJECT #1 PREVENTING INFECTIONS AFTER SURGERY: SAFETY OF INTRACAMERAL MOXIFLOXACIN IN PAEDIATRIC POPULATIONS

Children with serious vision conditions, such as cataracts, often require surgery to help them see. In the past, children who underwent paediatric cataract surgery were given antibiotics just under the surface of the eye, in the area called the subconjunctival layer, to help prevent infections. However, studies in adults proved that antibiotics can be administered directly into the eye, lowering rates of eye infections. SickKids study investigated whether the safety of intracameral (within the eye) IC-Mox antibiotics were equivalent to subconjunctival (just under the surface) SC-Ab antibiotics in paediatric lens surgery. SickKids patients undergoing lens-related surgery between January 2012 and June 2017 were reviewed for the study. Our findings concluded that the use of IC-Mox in patients showed equivalent results in post-operative safety outcomes compared to subconjunctival antibiotics, meaning that this new method is safe for our young patients, it can be used routinely similar to adult cataract surgery, and will ultimately lessen the risk of infection.

PROJECT #2 ADVANCES IN THE TREATMENT OF GLAUCOMA: OCULAR MOTILITY DISTURBANCES AFTER AHMED VERSUS BAERVELDT FOR THE TREATMENT OF PAEDIATRIC GLAUCOMA

Paediatric glaucoma is a group of diseases where children experience high pressure inside their eye. If it's not treated, glaucoma can cause optic nerve damage and permanent vision loss. A common treatment for paediatric glaucoma is a shunt insertion (a bypass for fluid to flow out of the eye), which may involve complications, such as the physical disruption of ocular alignment within the orbit, resulting in things like strabismus (eyes crossing or wandering), and/or diplopia (double vision). SickKids is currently undertaking a study to investigate the incidence and degree of extraocular motility disturbance following shunt implantation for the treatment of paediatric glaucoma, specifically comparing the two types of shunts currently used at SickKids (the Ahmed and Baerveldt glaucoma drainage devices) to establish which type would cause less issues. This observational study will have big implications for children with glaucoma.

PROJECT #3 INVESTIGATIONS INTO AN INHERITED EYE DISEASE: THE CORNEAL ENDOTHELIUM IN PEDIATRIC POSTERIOR POLYMORPHOUS CORNEAL DYSTROPHY (PPMD)

Posterior Polymorphous Corneal Dystrophy (PPMD) is a rare bilateral, autosomal dominant inherited eye disease. PPMD causes lesions in the cornea and can be categorized into three subset: vesicle, band and diffuse. Thanks to Brandan's Eye Research Fund, SickKids patients diagnosed with PPMD at SickKids between July 2013 and June 2019 were studied to better understand this rare disease. We had many exciting findings: eyes with the diffuse type of PPMD had a significantly lower endothelial cell counts than those with vesicular type PPMD, eyes with more than five endothelial lesions had a significantly lower endothelial cell counts than those with less than five lesions, and PPMD is associated with an annual rate of endothelial cells loss twice that reported in a healthy age matched paediatric cohort. Patients with diffuse type PPMD and those with a greater number of lesions in each eye require even closer monitoring of their disease as they are found to have the lowest endothelial cell counts as well as the most significant decline. From this project, we concluded that children with PPMD, especially those with a high rate of endothelial cell loss, need early intervention in order to minimize visual morbidity and prevent corneal transplantation.

Brandan's Eye Research Fund has been—and will continue to be—critical to SickKids' efforts to improving the lives of children affected by eye conditions and vision loss. Thank you for your generous support.

THANK YOU

Every day, SickKids works towards improving the lives of children, and our success depends on the generosity of donors like Brandon's Eye Research Foundation. Your commitment to vision health at SickKids ensures that we can continue to offer the best possible health outcomes for children. Thank you for your remarkable generosity.



**FOR MORE INFORMATION,
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