

# UK & Ireland observational study of outcomes following congenital / infantile cataract surgery: IoLunder2 five year follow up

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## Abstract

**Purpose :** To investigate outcomes following cataract surgery with and without primary intraocular lens implantation in children aged under 2 years with congenital or infantile cataract.

**Methods :** A bi-national prospective longitudinal cohort study undertaken through a collaborative research network, with case ascertainment through active surveillance, and standardised data collection on children who underwent cataract surgery with and without IoL implantation between Jan '09 and Dec '10. Multivariable multilevel regression modelling was undertaken to interrogate the association between IoL implantation and outcomes of interest.

**Results :** 256 children were recruited into the study following informed parental consent. For 242 (95%) children, 5 year post-operative follow up data were available. Overall, median age at surgery was 7 weeks (IQR 5 weeks-7 months). Significant ocular co-morbidity (horizontal corneal diameter<10mm, axial length<16mm, complex persistent fetal vasculature, other structural anomaly) was present in 42% of BCC eyes, 39% of UCC eyes.

Primary IoL implantation was undertaken in 58/149 children with bilateral congenital/infantile cataract (BCC) and 45/93 with unilateral disease (UCC). Children who underwent IoL implantation were older at surgery, less likely to have an ocular comorbidity, and less likely to live in relative socioeconomic deprivation.

At 5 years following surgery, median acuity in eyes of children with BCC was 0.5 logMAR (interquartile range 0.2-0.9), and with both eyes open 0.38. Median acuity in operated

eyes of children with UCC was 0.8 logMAR (IQR 0.4-1.5). Secondary glaucoma had been diagnosed in 24% of BCC children (13% of eyes), and 12% of children with UCC. Following adjustment for age at surgery and presence of co-existent anomalies, IoLs were not associated with better visual outcome, and did not reduce odds of secondary glaucoma.

**Conclusions :** Based on the findings that IoLs do not confer visual benefit or protective effect against glaucoma (as previously postulated), and previous findings of a higher risk of re-operation, routine use of IoLs in children under 2 years is not advocated. IoLunder2 is also able to provide data on the associations of visual outcomes and glaucoma risk with age at surgery, peri-operative management and post-operative rehabilitation, in order to inform policy and practice.

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