

Oral Presentation

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## Abnormal visual functions in children with hydrocephalus

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### Clinical background

Children with surgically treated hydrocephalus manifest a range of ophthalmic disorders. The aim of this study was to assess visual function at school age in a population-based group of children with hydrocephalus.

### Materials and Methods

All 92 children with surgically treated hydrocephalus born 1989–1993 in the western part of Sweden were invited to participate in the present population-based study. A comprehensive ophthalmologic examination was performed on 75 (82%) of these children and results were compared to those of an aged matched reference group ( $n = 140$ ).

### Results

Abnormal ophthalmologic findings were found in 83 % of the children. Visual impairment (visual acuity  $<0.3$ ) was measured in fifteen percent of the children and 34% had mildly reduced visual acuity (0.3–0.8) None in the reference group had a visual acuity of less than 0.5. Refractive errors were found in 47/70 (67%) (ref 9%), predominantly hyperopia. Strabismus was found in 70% (ref 4%) of the children, with almost equal frequency of esotropia and exotropia. Strabismus and visual impairment was more common among the children with hydrocephalus without myelomeningocele (MMC) than in children with MMC. There was no significant difference in ophthalmological outcome between the various aetiological causes of hydrocephalus without MMC. However, children born preterm with hydrocephalus had a tendency for worse ophthalmologic outcome than children born full-term.

### Conclusions

A majority of children with hydrocephalus had ophthalmological abnormalities. Children with hydrocephalus and MMC were least affected while children born preterm were found to be at a high risk of visual impairment. Based on the high frequency of ophthalmological abnormalities, we suggest that children with hydrocephalus should be assessed by a paediatric ophthalmologist.