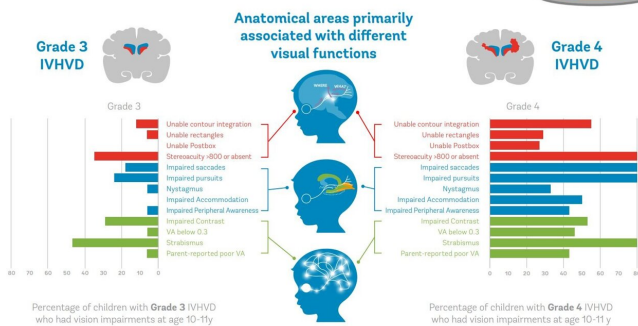


'Brain bleeds' in babies' first year can lead to long-term vision problems

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to 11 years old. They investigated whether the Grade of IVHVD experienced as babies affected their visual outcome at the end of their primary school years and explored associations between visual outcomes with cognitive outcomes and with extra support at school.

The visual examinations were part of a ten-year follow-up study for children in the original DRIFT randomized trial. Testers followed a protocol, and it was unknown to them whether the [child](#) had experienced Grade 3 or Grade 4 IVHVD and all other data.

The 10-year follow up of visual functions in 32 children who in the first year following their birth experienced Grade 3 or Grade 4 Intraventricular haemorrhage with Ventricular dilatation (IVHVD). Credit: University of Bristol

The study found all 32 children assessed had at least one [visual impairment](#). The average number of impairments per child was six for children who experienced a Grade 4 IVHVD compared to three for children who experienced a Grade 3 IVHVD. Each extra vision impairment for each child was associated with increased educational support at school, after adjustment for developmental age equivalence.

Severe "brain bleeds" experienced by some babies in the first year following their birth lead to long-term sight problems, researchers at the University of Bristol have found as part of a ten-year follow-up study.

These sight problems affecting the children ten years later were often due to damage to the visual areas in the brain. These included problems with moving the eyes accurately, with detecting objects in the space around them or with visually matching shapes or orientations of lines.

The study, published in the journal *Developmental Medicine & Child Neurology* today [23 June], reviewed 32 children who had detailed assessments at 10 to 11 years old after experiencing Grades 3 or 4 intraventricular hemorrhage (brain bleeds) and ventricular dilation (IVHVD) as part of a study called [DRIFT10](#).

The children's parents were unaware of these problems and mostly reported their children had normal vision as long as any glasses they had were being worn.

The DRIFT10 study was set up to investigate a "brain washing" technique for brain bleeds called DRIFT (Drainage, Irrigation and Fibrinolytic Therapy). DRIFT, pioneered by Bristol researchers, is the first and only treatment to objectively benefit infants with serious brain hemorrhage by washing out the ventricles in the brain to remove toxic fluid and reduce pressure.

However, the researchers found that for each additional sight problem a child had, they were more likely to be getting extra support with their learning. This suggests the sight problems may have contributed to the difficulties with learning experienced by this group of children.

The research team reviewed 32 children aged 10

Cathy Williams, the study's lead author and

Professor of Pediatric Ophthalmology at Bristol Medical School: Population Health Sciences and Consultant Pediatric Ophthalmologist at University Hospitals Bristol and Weston NHS Foundation Trust (UHBW), explained: "Our research suggests that all children who experience brain bleeds or similar problems as babies should have eye tests to identify [brain](#)-related vision problems as they grow up, so that appropriate support can be offered to see if it is helpful for them.

"Researchers in the future should be aware that parents who report normal vision may miss sight problems that are important for their children's learning and development."

"Vision function in [children](#) 10 years after Grades 3–4 intraventricular hemorrhage with ventricular dilation: a masked prospective study," by Cathy Williams et al, is published in *Developmental Medicine & Child Neurology*.

More information: Cathy Williams et al, Vision function in children 10 years after grade 3 or 4 intraventricular haemorrhage with ventricular dilation: A masked prospective study, *Developmental Medicine & Child Neurology* (2022).
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Provided by University of Bristol

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