

Study explores treatment options for babies with cataracts

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David Morrison, MD, and colleagues are studying whether to implant an artificial intraocular lens or fit a contact lens over a baby's cornea after cataract surgery. Credit: John Russell

Cataracts are uncommon in babies, but when they occur, the cloudy lenses must be removed without delay or blindness may result.

"In [children](#) the neural pathways in the brain that carry vision are rapidly

developing," said David Morrison, MD, a pediatric ophthalmologist at Vanderbilt University Medical Center. If cataracts are not removed before babies are 3 months old, "they'll be permanently blind even if you (operate) afterward due to damage of these [neural pathways](#)," he said.

The incidence of cataracts in children is roughly one per 10,000—far lower than the incidence in adults. Cataracts in children can result from genetic factors that cause structural abnormalities in the eye. Prenatal infections and metabolic disorders also can trigger [cataract](#) formation. However, many cases of congenital cataract are idiopathic, or without a known cause.

But while they're uncommon, treating them requires a high level of expertise because the infant's eye is not yet fully formed.

An important question is whether to implant an artificial intraocular [lens](#) or fit a contact lens over the baby's cornea after surgery. In older children as well, which method works best and has the fewest complications?

Morrison is vice chair of a collaborative research network called the Pediatric Eye Disease Investigator Group (PEDIG), which, since 1997, has endeavored to answer questions like these. VUMC's participation in PEDIG began with Sean Donahue, MD, Ph.D., Sam and Darthea Coleman Professor of Pediatric Ophthalmology.

More than 300 pediatric ophthalmologists and optometrists in the United States, Canada and the United Kingdom, including seven from VUMC, participate in the network, which is funded by the National Eye Institute of the National Institutes of Health.

PEDIG is following a group of children up to age 13 after cataract removal. Results in 994 children a year after surgery were reported last

month in the journal *JAMA Ophthalmology*.

The researchers found that children frequently had good visual acuity following cataract surgery whether they received intraocular lens implants or contact lenses, although acuity remained lower than average for most ages. Vision tended to improve more in [older children](#) and in those who had bilateral surgery (in both eyes).

Complications were few and included 67 new or suspected cases of glaucoma, increased intraocular pressure that can damage the optic nerve. Glaucoma can occur in children following cataract removal and is more common in younger children having surgery.

"This is a kind of snapshot of our initial findings," said Morrison, associate professor of Ophthalmology and Visual Sciences and of Pediatrics, who served on the report's writing committee.

"We're continuing data collection," he added. "The three- or five-year findings may be even more fruitful as far as our ability to make recommendations and predictions about how to best care for these children."

In adults, cataract surgery often can be performed without the need for a single stitch to close the wound. "But in babies, the surgery is much more complex," Morrison said. "The eye is so much smaller, and the rigidity of the eye is much lower. As such, we have to use different instrumentation and a completely different surgical technique than in adults."

At VUMC, all pediatric ophthalmology fellows in specialty training learn how to do the [surgery](#).

"We have a large body of experience for offering these kids state-of-the-

art care, both surgically and postoperatively," said Morrison, who was Vanderbilt's first pediatric ophthalmology fellow and who now is the fellowship director.

"We also have support staff in the clinic who are able to fit contact lenses in four- and six-week-old babies," he added.

Provided by Vanderbilt University

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