

Monday, February 22, 2010

## Screening device may catch kids' eye problems early

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If a young child feels hurt or uncomfortable, odds are that his or her cries will alert you to it soon enough. But kids who have trouble seeing usually don't know there's anything wrong.

"Children will not report that their vision is down in one eye," says Dr. Todd Goldblum, a pediatric ophthalmologist at the Family & Children's Eye Center of New Mexico in Albuquerque. "To them, it's all they've known."

Many vision problems are easy to correct if caught early, which is why Goldblum has adopted the PediaVision, a new eye-screening device that uses infrared light to screen for potential blindness-causing disorders in kids too young to talk.

At first glance, the machine looks a bit like the radar gun police use to catch speeders, says Petra Facio, whose 3-year-old son was tested at Goldblum's office in January. One difference is the smiley face on the end, where kids are told to look before it fires a ray of infrared light into their eyes, then takes a photo of the reflection.

A computer analyzes the photo for abnormalities, giving an instant readout of the results.

The machine is 90 percent accurate in finding problems like nearsightedness or astigmatism, and catches an even greater portion of kids with more serious conditions, says Jeff

Mortensen, vice president of PediaVision Holdings, in a phone interview from company headquarters in Florida.

It's a boon to pediatricians and eye specialists, he says, because it allows children to be screened accurately and quickly, even if they can't interpret the standard eye charts with letters or pictures.

Vision problems are much easier to treat effectively when kids are younger, according to the American Optometric Association, but only about one-third of American schoolchildren have been tested before their first day of kindergarten.

It's why Goldblum, as part of the vision screen committee for the state Health Department, helped craft a 2007 law that recommends all children in the state be tested before third grade, using either the traditional methods or machines like the PediaVision.

The same law established the "Save Our Children's Sight Fund" to help fund corrective procedures for families that can't pay.

A basic eye examination should be a part of a thorough pediatric check-up, Goldblum says. If a pediatrician thinks photoscreening is necessary but doesn't have a PediaVision, he or she can refer the patient to an ophthalmologist like Goldblum, who only sees patients on referrals.

Some volunteer service organizations like the Lions Club also offer PediaVision, and Mortensen says the company is trying to get more of its screening units in schools.

If insurance doesn't cover the screening, Mortensen says the procedure costs \$15 to \$25 out-of-pocket. He says he hopes Medicaid will cover it eventually.

## Early awareness

Goldblum says most of his PediaVision tests involve children whose siblings have eye problems.

Facio's two older children, 11 and 13, have bad vision that went unnoticed until they were 8 or 9 years old. She says she wanted to see if her 3-year-old had similar problems before he went to school, to give him an easier time in class and to head off further erosion in his sight.

"With the other two, I wasn't really aware until they were in school," she says. "It's just good to know."

She took her son to Goldblum's office, where she says her shy boy laughed and looked at the smiley face for a few short moments, then the test was over.

His results came back quickly; he doesn't have vision problems.

Stephanie Gomez's youngest son, 3, is developmentally disabled and has been treated for severe eye problems since before his second birthday.

Goldblum's early astigmatism diagnosis was confirmed by the PediaVision in January, when the boy and his two siblings — ages 5 and 7 — were tested.

"My first impression was, 'What is that?'" Gomez says. "It was really fun. They approached me with, 'We're going to take a picture,' and they just took the photo."

The older children were fine, and excited to keep their photos after the visit, she says. The youngest had his prescription adjusted based on the results.

## Serious conditions

Many children aren't so lucky, Goldblum says, pointing to serious conditions like amblyopia and strabismus.

Amblyopia, sometimes known as "lazy eye," is a leading cause of blindness among children, Goldblum says. It is fundamentally a neurological disorder in which the brain starts to ignore input from an eye it perceives as underperforming.

Amblyopia can be treated a number of ways, most of which are simple: patching or administering blurring eyedrops to the fully functioning eye, even for just two hours a day if the case isn't too severe, according to the National Institutes of Health Web site. When the functioning eye is hindered, Goldblum says, the brain is forced to create and strengthen neural pathways from the other; treatment lasts until the eyes are about equal.

"We can take a child who is almost blind in one eye," he says, "get their vision better, and have it stay good for 80 years."

Strabismus, a disorder in which sufferers' eyes do not line up in the same direction when focusing — commonly known as "crossed eyes" or "wall eyes" — can be corrected with glasses or eye-muscle exercises, according to the NIH.

"The earlier you detect amblyopia or strabismus, the better the outcome," Goldblum says.