

# Johns Hopkins study connects student vision with literacy

June 2 2015, by Erica L. Green, The Baltimore Sun

---

In the month after Alexander Dominguez joined Maygon Thompson's third-grade class at Charles Carroll Barrister Elementary School, he breezed through worksheets and quickly rose to be among the most studious members.

So when the third-grader couldn't read a relatively simple sentence on the board, Thompson was puzzled.

"I thought he was kidding," said Thompson, a special educator at the public school in Southwest Baltimore. "But he's so serious about his work, it had to be something else."

A team of researchers at the Wilmer Eye Institute at Johns Hopkins Hospital might have figured out that "something else." They're trying to answer a basic but overlooked question: Are [students](#) struggling to read because they can't see?

For the past six months, Hopkins pediatric ophthalmologist Dr. Megan Collins has been conducting screenings and administering glasses to students in a dozen Baltimore elementary schools to produce a first-of-its-kind study that attempts to link vision deficiencies and literacy in a school-based population.

Whether students can't read because they can't see, Collins said, is one of those "important research questions you think someone else has answered."

"It's the sort of age-old question we're trying to get an answer to," she said. "And if we can, I feel like we're doing something very real and very tangible that can change students' lives."

Case studies have linked vision and literacy, Hopkins researchers say, but there has never been a large-scale epidemiological study on school-age children with conclusions drawn from their reading performance in the classroom.

Their pilot will include a sample of 300 students from 12 schools, consisting of an internal and external screening of students' eyes, a dilated exam, and if need be, a measurement for glasses.

The study begins with a reading exam, and students who receive glasses take another exam at the end of the school year.

So far, the results have been staggering - of the 250 students tested between January and March, 150 met the criteria for needing glasses.

"We were very surprised," said Dr. David Friedman, director of Hopkins' Dana Center for Preventive Ophthalmology and a principal investigator on the study. "That's twice as many glasses as we typically prescribe in this population."

Friedman said a large population of students has other challenges, principally dyslexia, that contribute to difficulty reading. But he said the results so far are still significant, particularly if applied on a national level.

"Even if it's in 5 or 10 percent who benefit from just having glasses, that would have a huge impact," he said.

The Maryland State Department of Education requires students to be

screened for vision only in the first grade and ninth grade. That leaves a big gap for problems to go unnoticed.

Julie Gray has been teaching at Charles Carroll Barrister for 16 years. When a student is struggling to read, she said, vision problems are the last thing she's looking for.

"This is so helpful because it's not something teachers can easily identify," she said. "We're not doctors."

The city also has a history of shortcomings when it comes to ensuring that students are screened and treated properly.

The Abell Foundation reported in 2010 that the city's health department, which conducts city students' eye screenings, had insufficient staff and resources to test students and follow up to see if they received corrective care.

Dr. Leana Wen, Baltimore's new health commissioner, said the department has made significant improvements since then. In the last academic school year, she said, the department increased its vision screening rate to 96 percent.

But challenges remain with follow-through, Wen said. Less than 20 percent of students who screen positive for vision deficiencies end up getting glasses, she said. That leaves the health department and the school system trying to reach parents.

Health department officials found that fewer than 1 in 2 parents can be contacted to let them know their student's eye exam results or give permission for additional care, and fewer than 1 in 2 take their students in for glasses once they know.

"We focus a lot on the front end, but it's not sufficient," Wen said. "Our children aren't getting the care that they need; we're not getting the results we want."

Wen said lack of vision care is a "big problem" among city students, exacerbating educational barriers like truancy and drop-out rates.

The health department is looking at innovative ways to get glasses to students, such as mobile eye clinics. Wen said Hopkins' approach is just the kind needed to tackle the problem.

"It's high time to focus on low-tech innovations that have the biggest impact on our students," Wen said.

Students receive glasses if they have refractive errors such as near-sightedness or far-sightedness, astigmatism, or if researchers decide they might do better in the classroom if they had glasses.

The criteria for giving some of the students glasses is slightly more liberal than if they were being treated at the optometrist. But even using the standard would result in an unusually high percentage.

The study includes second-and-third grade students, who are at a critical time in their educational trajectory.

Research shows that the third grade is a crossroads, particularly for low-income students. Those who can't read by the end of the third grade are four times less likely to graduate on time.

On the most recent state assessments, 56 percent of Baltimore third-graders scored proficient in reading - a near 10-year low.

Bob Slavin, professor at Hopkins' School of Education, said it's

"shameful" that there hasn't been a concentrated effort to tackle vision deficiencies as an educational barrier.

"We have to get people thinking that school reform is more than just books and computers," he said. "That by whatever means are necessary, we have to go where we need to go to make sure kids are successful."

The schools chosen to participate in the pilot study are part of the Success for All Foundation, founded by Slavin in 1987, which provides education programs and curricula to schools across the nation.

Slavin believes money - the Hopkins study is funded by a large donation to the Wilmer Institute - and classification are the reasons the connection between vision and literacy has never been explored deeply.

"As long as we see it purely as a health problem, there's no money to solve it," he said. "If you see it as something that's an education problem, the money is already there, it's already being used for special education, remedial programs and tutors."

Students who meet the criteria for glasses receive two pairs, for home and school. In addition to limited access to vision care, many students in the study, like Alexander, were found to have been prescribed glasses at some point and lost them or broke them.

At Charles Carroll Barrister, a small school in Pigtown where 62 percent of third-graders scored proficient on the 2014 state test, the impact of the study could be profound.

About one-third of the school's population speaks English as a second language.

"Our greatest struggle is figuring out what they really know and what is

just a barrier," said David Wunder, principal of Charles Carroll Barrister. "This study is really connecting a bridge for us."

Alexander was among five of 11 students screened that day who needed glasses, reflecting trends researchers have seen in the small group of city students so far.

Thompson learned from an eye exam the boy received through the study that he was near-sighted and had reduced vision in both eyes.

"I never knew he couldn't see," said Thompson. "It's like: Did nobody think to ask?"

©2015 The Baltimore Sun  
Distributed by Tribune Content Agency, LLC.

Citation: Johns Hopkins study connects student vision with literacy (2015, June 2) retrieved 26 April 2024 from <https://phys.org/news/2015-06-johns-hopkins-student-vision-literacy.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--