

Eye exams linked to kids' reading levels

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Elementary school children who read below grade level may have challenges with their eyesight even if standard tests show they see 20/20, according to a new study from the University of Waterloo.

The study showed that children with reading challenges may have lower than expected binocular vision test results, something a standard eye exam may overlook.

"A complete binocular vision assessment is not always part of the standard vision test," said Dr. Lisa Christian, lead researcher on the project and an Associate Clinical Professor at the School of Optometry and Vision Science, University of Waterloo. "However, binocular vision problems could be compounding a child's academic difficulties, and should be investigated."

The study involved a retrospective review of 121 children between the ages of six and 14 who all had an Individual Education Plan specifically for reading. It found that more than three quarters of the students had good eyesight, but when they were tested for binocular vision, more than a third of the group scored below what was considered normal.

"Kids can see words on the page, but if (for example) they have difficulty turning their eyes in to read or focusing words on a page, they may experience symptoms of eye strain, double vision or fatigue after five or 10 minutes," Christian said. "It's not just about visual acuity, but about how well the eyes work together when performing an activity such as reading."

Optometrists classify [binocular vision](#) anomalies under three main categories: accommodation, vergence and oculomotor - with the symptoms often seeming benign or masked as other problems.

Children with accommodative issues have trouble focusing or have trouble changing their focus from one distance to another. Those with vergence issues have difficulty turning their eye in or out, eye movements often required for reading. Children with oculomotor issues have trouble with eye tracking and may lose their place when reading.

"Full eye examinations, particularly in children with [vision](#) issues, may be a tool for parents and educators to assist [children](#) who are found to have difficulty reading," added Christian.

The study appeared this month in the *Journal of Optometry*.

Provided by University of Waterloo

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