

New approach to slowing nearsightedness in children shows promise

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Combining two different treatment methods to slow the progression of myopia may deliver better results than either can achieve on their own. A new, two-year study shows that treating children with eye drops and contact lenses was 28 percent to 38 percent more effective in slowing myopia. The researchers present their results today at AAO 2019, the

123rd Annual Meeting of the American Academy of Ophthalmology.

There is a world-wide epidemic of [myopia](#), also known as nearsightedness. Since 1971, the incidence of nearsightedness in the US nearly doubled, to 42 percent. In Asia, up to 90 percent of teenagers and adults are nearsighted.

Nearsightedness may not seem like a serious eye condition. Glasses and [contact lenses](#) can provide [effective treatment](#). But high myopia, defined as -6 D or more, can lead to potentially blinding complications, such as glaucoma, retinal detachment and retinal degeneration.

Myopia can't be stopped, but it can be slowed. There are two methods for slowing progression. One method uses 0.01% [atropine](#) eye drops, instilled in the eye every day. Atropine is a medication commonly used to dilate or widen the eye before an exam. How it slows progression is unclear (some evidence suggests atropine blocks muscarinic receptors in the retina). But research shows it is effective and safe.

Another method is orthokeratology, which involves using rigid gas permeable contact lenses every night to reshape the cornea, the clear, front part of the eye. It's also unclear how contact lenses slow progression, but it is thought that reshaping the cornea changes the peripheral focus of the eye to reduce myopia progression. There are risks with overnight contact [lens](#) wear, such as corneal abrasions, ulcers or infections, and scarring that can lead to vision loss. Myopia progression can rebound with both methods, though less so with 0.01% atropine.

Two treatments, each effective, each appear to work in a different way. What if they were combined? Would the combination have an additive or synergistic effect?

To learn more, Nozomi Kinoshita, M.D., Ph.D., and colleagues at Jichi Medical University in Japan, randomized 80 children into two groups: one received both orthokeratology and atropine, while the second group received only orthokeratology. The children, aged 8 to 12 years old, exhibited a range of myopia, from low to high (from -1D to -6 D). They were treated for three months and then followed for two years. In children with higher myopia, combination treatment was 28 percent more effective compared with contact lenses alone. In [children](#) with lower myopia, combination treatment was 38 percent more effective.

"At present, using atropine together with orthokeratology can become a better treatment option to slowing myopia progression," Dr. Kinoshita said. "We believe this combination will be an optimal treatment option because together, both therapies complement the weakness of each other."

Provided by American Academy of Ophthalmology

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