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Nearsighted… These New Glasses Might Help

Researchers in Hong Kong say they have developed new lenses that can slow and even stop the progression of myopia in children.

Myopia affects almost 30 percent of the population in the United States. Severe myopia is associated with complications that can threaten your eyesight.

However, there's some promising news on the horizon, at least for children.

Glasses that proponents say are specially designed to slow the progression of myopia in children are scheduled to launch this summer.

The lenses, developed by scientists at the Hong Kong Polytechnic University, were found to reduce the progression of myopia for 60 percent of the young participants in a two-year, double-blind, randomized clinical trial.

In addition, the new lenses completely stopped further vision loss in 21 percent of trial participants.

Children who wore the lenses also had slower myopic progression by 59 percent and eye lengthening was reduced by 60 percent, compared with those who wore single vision lenses.

The new product is called the Defocus Incorporated Multiple Segments (DIMS) Spectacle Lens.

The DIMS lenses were awarded the Grand Prize, Grand Award, and Gold Medal with the Congratulations of Jury at the 46th International Exhibition of Inventions of Geneva earlier this month.

The lenses are the brainchild of Carly Lam, a professor at the School of Optometry at Hong Kong Polytechnic University, and Chi-ho To, a professor in elderly vision health at the school.

The researchers designed the lens to perform like the contact lenses currently used to slow myopia.

“With the DIMS Spectacle Lens, we’re able to put in many micro-lenses all over the surface of the ophthalmic lens. When the eye moves around different regions of the spectacle lens, the eye still experiences a constant amount of myopic defocus," said To in a press release.

Contact lens risks

Using corrective lenses to slow the progression of nearsightedness in children isn’t new.

Contact lenses have been used successfully to do this for some time. But they come with health risks, especially for younger children.

“Eye care professionals typically don’t recommend contacts for kids until they are 12 or 13 because the risks are often greater than the benefits for younger children. But age isn’t the only issue. It’s also a question of maturity,” said Dr. Bernard P. Lepri, OD, MS, MEd, an optometrist in the Food and Drug Administration’s Contact Lens and Retinal Devices Branch.

According to a 2010 study published in the journal Pediatrics, about one quarter of the more than 70,000 children who visit an emergency room each year for injuries and complications from a medical device have issues related to contact lenses.

The problems include infection and scratched corneas.

“Infections in children occur much more frequently in those who wear contact lenses. This is generally related to hygiene and less understanding about the consequences of proper handling. Infections can lead to cornea scarring and loss of vision which can be permanent or require invasive treatments,” said Dr. Ming Wang, president and co-founder of the Wang Foundation for Sight Restoration in Tennessee.

A growing need to slow myopia

Myopia, also called nearsightedness, can happen when your eye grows too long to focus images clearly on your retina or when your eye’s lens is too thick.

While people with myopia can usually see well enough to read a computer screen or book, they can’t focus clearly on objects farther away.

“It’s believed that near-vision strain may stimulate eye elongation until about age 20,” Wang told Healthline. “This can occur when someone looks at

anything closer than 6 feet, such as cell phones, tablets, and computers. Studies have shown that more time spent outdoors can reduce the risk of myopia, but fewer children are playing outdoors as they spend increasing amounts of time on electronic devices."

Dr. Nathan D. Rock, an optometrist at the Wang Vision Institute in Tennessee, adds that genetics is also a factor.

"It's fascinating how closely refractive error can correlate to a patient's parents, often falling about average of the mother and father's refractive error," he told Healthline.

"The numbers of people that are nearsighted are extraordinary. In the United States, it's gone up to about 45 percent of the population and there are estimates that by 2050, half the world's population will be nearsighted," Dr. David Troilo of the State University of New York College of Optometry told CBS New York.

"Research has been very conclusive that myopia is becoming more common in all technology heavy countries. Countries like China and Korea are experiencing even more of a problem than the United States," Rock said

He adds that this can have serious health implications.

"For severe nearsightedness… many may experience medical issues which can lead to vision loss similar to that which comes with age-related changes to the eye," he explained. "Patients are also at a much higher risk of retinal tears and retinal detachments which require invasive treatment."

Wang warns that the growing problem could have major consequences.

"Myopia is becoming an epidemic as lifestyles have changed," he said. "This means more and more people are relying on contacts, glasses, and surgery to

achieve better vision. It also means that more and more are experiencing permanent loss of vision associated with degenerative myopia. Some studies indicate 40 percent of those with degenerative myopia will experience some form of vision loss associated with progressive retinal thinning and atrophy in their lifetime. Technologies like these lenses, which help reduce the progression of myopia, can help reduce the incidence of these harmful effects. We'll certainly see an increase in use of these technologies as more become available."