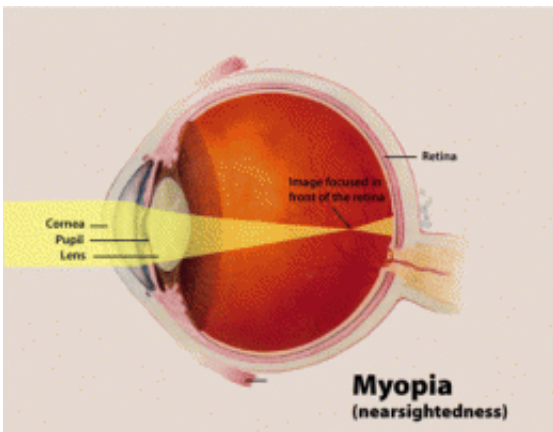


Specialty contact lenses may one day help halt the progression of nearsightedness in children

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This is a diagram of myopia in the human eye. Credit: National Eye Institute

Nearsightedness, or myopia, affects more than 40 percent of people in the U.S. and up to 90 percent of children in some parts of Asia. The problem begins in childhood and often progresses with age. Standard prescription lenses can correct the defocus but do not cure nearsightedness, and do not slow progression rates as children grow.

But recent experimental work by biomedical scientist David Troilo and colleagues at the State University of New York (SUNY) College of Optometry in New York City supports the development of a potential cure for myopia by using specialty contact lenses that coax the eye to

grow in a way that can correct nearsighted vision while reducing myopia progression. Troilo will describe his findings at the Optical Society's (OSA) Annual Meeting, Frontiers in Optics (FiO) 2012, taking place Oct. 14 in Rochester, N.Y.

Myopia develops when the eye is too long, making it difficult to focus light from distant objects on the retina. Glasses or contact lenses that correct the defocus on the main visual axis can create a slight degree of farsightedness in the peripheral retina, Troilo says. The peripheral farsightedness may worsen myopia because as [children](#) grow, the eye grows to move the retina to where the light is focused, naturally lengthening the eye even further.

Troilo has shown that specially designed [contact lenses](#) that alter how light is focused in the peripheral retina can induce changes in growth that help reshape the eye in the desired way. The experimental lenses use different focal powers within a single lens: either alternating focal powers across the lens, or confined to the outer edge. Experiments with the new lenses found that they changed eye growth and refractive state, or focus, in a predictable way. The lenses successfully reduced the elongation of the eye that causes myopia progression.

Several contact lens designs may soon be available to help [eye](#) doctors manage the progression of myopia in children, Troilo says. Presentation FW1C.1 "Optical Approaches for Controlling [Myopia](#) Progression: Evidence from Experimental Models" takes place Wednesday, Oct. 17 at the Rochester Riverside Convention Center.

Provided by Optical Society of America

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