

## Progressive (High) Myopia

Myopia (“near-sightedness”) is a condition in which the optical system of the eye causes incoming light rays to focus in front of the retina, instead of focusing directly on the retinal surface. Various factors can cause this abnormal focus of light rays, including abnormalities of the lens or cornea, or by an eye that is abnormally long. Myopia is treated with glasses in younger children or, in some cases, contact lenses in older children and teenagers. Refractive surgery, such as Lasik, is generally reserved for adults except for certain limited studies in children less than 18 years of age.

High myopia is generally defined as near-sightedness of -6.00 diopters or higher, and is often associated with a very long eye, termed a long “axial length.” High myopia generally begins in early childhood, and continued growth of the eye often means that the corrective lens prescription required to allow proper focus may not stabilize until the early adult years. The prevalence of high myopia has been increasing over the last several decades, particularly in developed countries. The reason for this trend is unknown. Because more people, including children, are developing high myopia, various methods of attempting to slow its progression have been attempted. These have included optical means, like rigid contact lenses and bifocal glasses, to pharmacologic methods, such as atropine eye drops. Recent studies in children of Asian ancestry demonstrated that very low dose atropine (.01%) use was more effective in lowering myopic progression than standard concentrations with a lower incidence of light sensitivity or the need for temporary reading glasses. These findings require ongoing prospective study of children of all backgrounds before they can be widely recommended for use in all myopic children. Finally, there is evidence to suggest that time spent outdoors during childhood may reduce the progression of myopia in children and adolescents.

It is important for patients with high myopia to receive regular dilated eye exams, since this condition is associated with an increased lifetime risk of retinal holes or tears, which can lead to retinal detachment. Other associated risks can include abnormal blood vessel growth beneath the retina, and changes in the vitreous cavity within the center of the eye.

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