



## UPTOWN EYECARE & OPTICAL

### Controlling Myopia & Changing Lives

In the United States, myopia's prevalence rate has increased from 25% to 42% in the past 50 years. Worldwide, the highest rates are found in Asian populations, approaching 96% in some regions. Significant increases have occurred within just one generation, which implies that our environment has a significant effect on myopic development, even if there is an underlying genetic component.

Myopia less severe than -6.00D is often termed physiological myopia and has historically been perceived merely as a nuisance to the patient. However, research recently showed that myopia is a dose-dependent risk factor for many ocular diseases, such as glaucoma, myopic maculopathy, cataract and retinal detachment. Levels of myopia in the physiological range show a risk of cataract and glaucoma comparable to that of stroke from untreated hypertension. Myopia was shown to be a risk factor for retinal detachment and myopic maculopathy "far in excess of any identified population risk factor for cardiovascular disease."

#### Treatment Options

**1. Atropine.** Recent reports show that atropine in dosages as low as 0.01% once a day has a clinically meaningful ability to slow myopia by 50% without significant pupil dilation and light sensitivity, and the effect persists after discontinuation of the treatment. Instilling these drops in children's eyes reduces eye growth and therefore myopia progression. However, there may be children who are poor responders and may need higher atropine concentrations, and therefore need bifocals and sunglasses to be comfortable during the treatment. *In our office, this is not our first line of treatment due to potential ocular and systemic side effects (pupil dilation, accommodation lag, allergies, tachycardia, dry eye and mouth, constipation and flushing), but it's a great treatment option for little kids, or those whose myopia is rapidly progressing.*

**2. Soft multifocal contact lenses.** Several studies in the past decade have shown that wearing soft multifocal contact lenses with distance concentric designs and a +2.00 / +2.50 peripheral add on a daily basis slow down the development of myopia, as well as elongation of the eye by about 30-40%. The lenses work because they focus light in front of the peripheral retina, and they focus light right on the central retina, which provides people with clear vision. Children as young as age 8 can learn how to insert and take care of lenses. *This option is good for kids that have higher starting prescriptions, or when orthokeratology may be too difficult to fit. Lenses that we use at our office are Biofinity multifocals / Proclear toric multifocals (monthly replacement), or NaturalVue multifocals (dailies).*

**3. Orthokeratology treatment.** Overnight use of orthokeratology lenses flattens the central portion of the cornea, therefore providing clear vision during the day without glasses or contact lenses. These lenses work similarly to distance centered soft multifocal contact lens designs, where the peripheral retinal defocus over time slows down the growth of the eyes, which leads to slowed myopia progression. On average, orthokeratology seems to slow the growth of the eye by a little over 40%, which is similar to the slowing of myopia progression reported for soft multifocal lenses and slightly less than atropine. *Currently, orthokeratology is our #1 preferred method of myopia progression. We use Paragon CRT lenses for our patients.*

#### Time to Act

Myopia onset usually begins between ages 6-9 and progresses rapidly at the beginning, slowing gradually with age. Early treatment is vital if lifetime benefits are to be achieved. It is our belief that parents, as well as practitioners, should stop accepting myopia progression as normal or at worst an inconvenience to the patient. Myopia is a highly significant risk factor for ocular health, in addition to its negative effects on lifestyle. It is time to use the tools we have available to actually treat myopia as a progressive disease, same as we do with numerous other conditions.

#### Additional Resources

MyKidsVision.org, MyopiaProfile.com, ManageMyopia.org