

# Myopia Control Clinic

## at CARPINTERIA EYE CARE

### INFORMATION AND CONSENT FORM

#### What is myopia?

Myopia is the clinical term for nearsightedness. Nearsighted eyes see nearby objects clearly, while objects far away are blurry without glasses. In order to see clearly, the eye uses the cornea (the clear window in the front of the eye) and the lens inside the eye to adjust the focus of the light entering the eye.<sup>1,2</sup> The clearest images are seen when light is focused accurately on the back of the eye (the retina). If the eye is too short or too long, the ability to accurately see the world decreases because the cornea and lens cannot focus the light onto the back of the eye.<sup>3</sup> Myopia usually results from the eye being too long.<sup>1</sup> Just like feet get bigger and children get taller, the nearsighted eye tends to get longer over time. This means nearsighted children often need to get stronger glasses every year as their eyes continue to grow.

#### What causes myopia?

Researchers are not sure exactly what causes myopia, but it is understood that genetics play an important role. Studies have shown that if a child has one parent who is nearsighted, the child is twice as likely to develop myopia than if neither of the child's parents were nearsighted. If the child has two nearsighted parents, the child is over five times more likely to develop myopia.<sup>4</sup> Environment also seems to play a role in the development of nearsightedness.<sup>5,6</sup> Research has found that more time spent outdoors may protect against nearsightedness; factors like circadian rhythm (internal biological clock) and parents' education level may also play a role.<sup>5,6</sup>

#### How can I correct myopia?

Myopia causes far away objects to look blurry, but the blurry vision can be corrected with glasses, contact lenses or refractive surgery. There may also be ways to control the growth of myopia.

#### Why try to control myopia growth?

Myopia treatments have been shown to reduce a person's myopia by up to 60 percent, which could reduce the need for wearing glasses or contact lenses.<sup>7-9</sup> Myopia has also been associated with common vision-threatening conditions like cataracts, primary open angle glaucoma and retinal detachments.<sup>10-15</sup> The risk of developing these conditions depends on the severity of the myopia; therefore, reducing a person's myopia could also decrease his or her chances of developing one of these vision-threatening diseases.

## What are some of the treatments for controlling myopia?

### *Corneal Reshaping Contact Lenses*

Corneal reshaping contact lenses are worn during sleep and are removed in the morning. They temporarily change the shape of the cornea so that a person can see clearly all day long without glasses or contact lenses. They are also thought to slow myopia development because they bend light that enters the eye in a beneficial way. Corneal reshaping contact lenses have been shown to reduce myopia progression on average by about 50 percent.<sup>16-18</sup>

### *Soft Bifocal Contact Lenses*

Soft bifocal contact lenses are routinely worn to help people aged 40 years and older read clearly as well as see far away. Soft bifocal contact lenses also are thought to slow myopia by bending light that enters the eye in a beneficial way. These lenses have been shown to reduce myopia progression on average by about 50 percent.<sup>19,20</sup>

### *Atropine*

Atropine is an eye drop that typically makes light seem bright because it makes the pupil (the black hole in the middle of the eye) bigger; it also blurs near vision because it reduces the eye's ability to focus while looking at nearby objects. It is not known how this medication slows myopia development.<sup>7-9</sup> Low concentration (0.01%) atropine has been shown to slow myopia progression by about 60 percent without increasing pupil size or decreasing near vision dramatically.<sup>7-9</sup>

## How long do I need to be treated?

The scientific community does not yet fully understand how long people should be treated with myopia prevention methods, but the general consensus is that people should be treated until they are at least in their mid-teens or longer.<sup>9</sup>

## Are myopia treatments safe?

### *Contact Lenses*

Children (ages 8-12 years) and teens (ages 13-17 years), both of which are age groups that are commonly fitted with contact lenses, are at an equally low risk for developing contact lens-related problems or being noncompliant.<sup>21</sup> Children and teens are able to wear their contact lenses for a similar amount of time each day. In addition, both groups feel that contact lenses improved their social acceptance, appearance, ability to play sports and overall satisfaction with their vision correction.<sup>22, 23</sup>

### *0.01% Atropine*

Low dose atropine is considered to be safe for children.<sup>7-9</sup> Low dose atropine has been shown to work without increasing pupil size or decreasing near vision dramatically, side effects that are seen with full strength atropine (1%).<sup>7-9</sup> In fact, only 8 percent of children complained of having problems with low concentration atropine, and glasses can reduce these symptoms if it is harder for the child to read or if the child is more sensitive to lights.<sup>7-9</sup>

## Are myopia treatments FDA approved?

Evidence in the scientific literature suggests that some contact lenses and eye drops may slow the growth of nearsightedness in some children. However, the United States Food and Drug Administration (FDA) has not specifically approved any contact lenses or eye drops for this specific purpose. All contact lenses and eye drops used at Carpinteria Eye Care Center have been approved by the FDA, just not specifically to slow the progression of nearsightedness.

## What are my myopia treatment options?

There are three ways to potentially slow the progression of myopia: corneal reshaping and soft bifocal contact lenses and/or atropine eye drops. As explained above, each treatment has its own risks. Your potential treatment(s) is/are marked with a check:

Corneal Reshaping Contact Lenses       Soft Bifocal Contact Lenses       0.01% Atropine

## Patient's (Required) and Guardian's (If Applicable) Consent

I understand the risks as indicated above, and I understand that while these treatments are approved by the FDA, they are not approved to slow the progression of myopia. I further understand that there is no guarantee or assurance of any treatment outcome for my child and that these treatments may not slow the progression of myopia. With that said, all three of these treatments have shown some promise in the research setting.

Child's name (print): \_\_\_\_\_

Child's name (sign): \_\_\_\_\_

Parent's name (sign): \_\_\_\_\_

Parent's name (print): \_\_\_\_\_

Date: \_\_\_\_\_

Dispenser's name (print): \_\_\_\_\_

Dispenser's name (sign): \_\_\_\_\_

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