

Refractive Error - Myopia

The Following Information has been Prepared for You:

When light enters the eye, it must come to focus on the retina to provide sharp vision. However, various eye shapes can cause the light to be out of focus. Your optometrist can determine how much to bend the light using glasses or contact lenses to refocus the light on the retina. The process of bending the light is called "refraction." The magnitude of the bent light is called the "refractive error." While glasses and contact lenses can bend the light, they do not offer a permanent solution. Your eye's shape will not change when wearing glasses or contacts. Therefore, if you have a refractive error, removing the glasses or contacts will cause your vision to return to a blurry state. Refractive surgery (aka LASIK, PRK, or RK), corneal ring implants, and intraocular lens implants can permanently change the shape of the eye, and the way the light focuses through it and offer long-term vision correction without the use of glasses or contact lenses.

Refractive error is largely inherited. However, environmental factors, health conditions, medications, injury, surgery, and the aging process can cause a person's refractive error to change over their lifetime.

Myopia (aka Nearsightedness) is caused by light that comes to focus "in front" of the retina (instead of "on" the retina), causing blurred vision that gets blurrier the further away you look. It may be particularly bothersome with night driving. Patients with myopia typically have large or long eyeballs, and they have a greater risk of retinal thinning, holes and detachments. They also have a greater risk of developing glaucoma with advancing age. Unlike hyperopia (aka Far-sightedness"), a person cannot easily accommodate for myopia. Squinting may offer some degree of improved focus but is not recommended. Squinting increases the risk of tension headache and wrinkles around the eyes and brow. It may also cause another type of refractive error called astigmatism. Your optometrist will use concave lenses with "negative" power lenses to focus the light onto your retina.

When children present with myopia, their eyes typically get more myopic as they grow and their eyes continue to lengthen. It usually stops progressing around the age of 20, when growth is complete. It may slightly decrease after the age of 40.

Myopia is typically inherited, but environmental factors play a role. Excessive near-vision tasks such as reading or computer, working under low light conditions, and not getting enough daily sunlight are all potential contributors to myopia development. There has been a worldwide trend of increased myopia, thought to be caused by more people doing extended near tasks on a daily basis, and staying indoors for longer amounts of time. Myopia is also linked to vitamin D deficiency - another side effect of spending less time outdoors. At least 20% of Americans have vitamin D deficiency. We recommend that children with myopia see their pediatrician for vitamin D testing.

There are additional ways to minimize myopia development in children. Bifocal glasses or contact lenses can alleviate the focusing demand for near tasks and keep the eyes more relaxed. If you are interested in this, discuss it with your eye doctor.

While not offered at our office, Ortho-K is a process of flattening the front of the eye - the cornea - with hard contact lenses that are worn overnight. This helps control the growth of the front of the eye. Adults with myopia may also use Ortho-K to minimize their dependence upon glasses or contact lenses during the day. The Ortho-K lenses act similar to a orthodontic retainer to maintain a certain corneal shape when worn nightly.

The most popular way to provide clear vision for myopic patients is thru glasses or contact lenses. However, LASIK and PRK are popular surgical procedures to reshape the cornea and provide sharp focus for adult patients. For those adult patients who are not candidates for LASIK or PRK, there are implantable contact lenses. We can assist you with these options if you are interested.

Due to the risk of retinal thinning, it is important to keep your eyes protected from impact injuries. Polycarbonate safety eyewear is recommended if you engage in activities that put you at risk of injury - sports, construction, shop work, auto-repair, yard work, etc. If you are prescribed glasses, consider purchasing polycarbonate lenses for them. In motor vehicles, sit a safe distance from the dashboard and avoid having large loose objects in the vehicle. Angle steering wheels perpendicular to your chest, so that air-bag deployment will not hit your face directly. If you develop any new symptoms of flashing lights, sudden floaters or

loss of side vision, or if you have eye, head or bodily blunt force trauma, seek medical attention right away. Make time to have a complete eye and vision examination annually!

Please Rate the Information You Received

	☐ Very helpful - all questions are answered ☐ Somewhat helpful - I still have questions ☐ Not helpful – none of my questions were answered
Comments / Questions / Typos:	

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