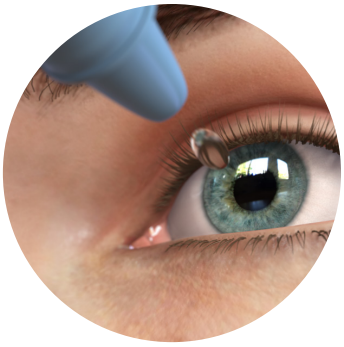
Research to Prevent Blindness

Advances in Eye Research:
Dry Eye

Dry eye is a common eye problem in the U.S., affecting an estimated 6 million women and 3 million men. This chronic eye condition develops when the eye does not produce enough tears, does not create the proper kind of tears or when tears evaporate too quickly. Tears protect the outer surface of the eye, so people with dry eye lose this protection.

People with dry eye may experience irritated or burning eyes, blurred vision that clears with blinking, and discomfort from reading, watching television, or using the computer for an extended period of time.

Though there is no cure for dry eye, treatments are available that may improve symptoms of the condition.



Several glands in and around the eyelids secrete components that make up the three layers required for tears: oil, water and mucus. Replacement tears can provide temporary relief for dry eye, but researchers are still searching for permanent solutions.

Risk Factors

Dry eye typically affects people over the age of 50. This condition can be caused by a variety of lifestyle factors as well as other medical conditions. One major risk factor is having an autoimmune disease known as Sjögren's syndrome, in which white blood cells attack the body's own moisture-producing glands. Rheumatoid arthritis and thyroid conditions can also increase your risk.

Women are at a higher risk than men for dry eye, especially women experiencing menopause. Researchers have found that this may be related to the fact that women have less of the sex steroid hormone known as androgen than men, leading to dry eye.

Other risk factors for dry eye include:

- using contact lenses,
- smoking cigarettes,
- having refractive surgery, known as LASIK surgery,
- living in a hot, dry or windy climate,
- using certain medications, such as antihistamines, diuretics, antidepressants or oral steroids, and
- having a diet low in omega-3 essential fatty acids.

If you think you might be experiencing dry eye, consult an eye care specialist. Regular eye exams are important for maintaining eye health.

Treatments

Lifestyle Changes

Simple changes to your daily activities, such as taking frequent breaks from activities that reduce blinking—including reading, watching TV and using the computer—may improve dry eye symptoms. When using the computer, place your screen at a level lower than your eyes so your eyes won't need to be wide open to view the screen.

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Stay hydrated by drinking plenty of water. Eat foods rich in omega-3 fatty acids, such as salmon, or take an omega-3 fatty acid supplement, which may help reduce eye inflammation.

Because the cold can affect dry eye, use protective eyewear during the winter.

Eyedrops and Anti-inflammatory Medications
According to researchers, increased salt concentration in tears leads to problems with the eye's surface and produces many dry eye symptoms. People with mild dry eye may be able to find relief through the use of eyedrops designed to moisturize the eye and restore the proper salt concentration of tears.

In more severe cases, when the production of tears is impaired, the surface of the eye may become inflamed. Anti-inflammatory medication may be able to help.

Medical Procedures
In people with more severe dry eye, an eye care professional may recommend plugging the tear ducts with punctal plugs, which are tiny silicone plugs that prevent tears from draining away from the eye's surface.

Dry eye is twice as common in women as in men. Studies show that women who consume omega-3 fatty acids on a regular basis, particularly from tuna fish, may reduce risk of dry eye.

Hope Through Research

The mission of Research to Prevent Blindness (RPB) is to preserve and restore vision by supporting research to develop methods to prevent, treat and cure all conditions that damage and destroy sight. RPB-funded scientists are conducting important research related to dry eye, including the following:

Relief for Patients with Severe Dry Eye
Studies have shown that a device known as the prosthetic replacement of the ocular surface ecosystem (PROSE) can reduce dry eye symptoms and shield the surface of the eye from additional damage. This device, which looks similar to an oversized hard contact lens, has benefitted patients with Sjögren's syndrome, Stevens-Johnson syndrome, chronic graft-versus-host disease and problems after LASIK surgery.

Hyaluronic Acid Treatments Hydrate the Eye
Scientists have created contact lenses that bind hyaluronic acid, a lubricant that helps the lens stay more hydrated. They are also developing a strategy to bind hyaluronic acid directly to the cornea's surface to combat dry eye.

Natural Compound Reduces Dryness
Early research has shown that that long-term supplementation with a compound known as NMN—found in foods such as broccoli, avocado, cabbage and cucumber—may increase tear production.

Invest in Your Vision

You can join RPB in supporting critical research in the fight against vision loss by sending your tax-deductible donation to the address shown below or online at www.rpbusa.org. RPB is a public 501(c)(3) foundation.

Since 1960, RPB has led a research effort to preserve vision and restore sight, supporting nearly every major development in the treatment of blinding disorders.

Research to Prevent Blindness

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