



Women & Healthy Vision

Sunlight. Airplanes. Wind. Smoking. Computers. Poor diet. Family background. This list of items may seem unrelated, but they all have one thing in common: They can negatively affect the health of your eyes. Yet with one exception—your family background—their potential impact on your vision can be modified if you're willing to make the effort.

And effort, where vision health is concerned, is a good idea. Of the approximately 3.4 million visually impaired Americans, about two-thirds are women; additionally, two-thirds of the one million Americans who are blind are women, says Ilene Gipson, PhD, a senior scientist at the Schepens Eye Research Institute, affiliated with Harvard Medical School in Boston.¹

In fact, nearly all eye-related diseases and conditions, including dry eye syndrome,² age-related macular degeneration (AMD),³ glaucoma and cataracts,⁴ are slightly or considerably more prevalent in women. One eye disease—glaucoma—is also significantly more prevalent in African Americans over age 40 and everyone over 60.⁵

Part of the reason women suffer more than their fair share of eye-related conditions is simply related to time: Women live longer than men, and nearly all eye conditions become more prevalent as we age. As for other reasons? “We do not know all the factors, but research is ongoing,” says Dr. Gipson.

Another reason has to do with the negative effects of inflammation on eye health, a byproduct of the immune system. Since women make up 75 percent of Americans living with autoimmune diseases such as multiple sclerosis, lupus, rheumatoid arthritis and Sjögren's syndrome, all of which can significantly affect the eyes, this may play a role in the eye-related gender gap.⁷

What is known, however, is that 75 percent of visual impairment can be prevented or corrected, primarily with lifestyle changes, says Dr. Gipson.² Armed with that knowledge and shocked by the high incidence of vision impairment in women around the world, she and colleagues at the Schepens Eye Research Institute and other medical institutions formed the Women's Eye Health Task Force, dedicated to providing education and outreach to stem the growing number of women with impaired vision.

Your Health & Your Eyes

The most common cause of vision loss in people over 65 in this country is age-related macular degeneration, or AMD. It affects an estimated 1.6 million Americans, most of them women.⁸ It primarily affects the part of the retina responsible for sharp central vision, gradually destroying it until you're left with just your peripheral vision (the outer part of

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your field of vision). One theory suggests it may be related to an inappropriate immune response that triggers inflammation.⁹

Patti Jacobs, 56, doesn't really care what the cause is. She just wants researchers to come up with a cure. Ms. Jacobs, a public relations consultant in Boston, MA, was diagnosed with an early, genetically related form of the disease in her thirties. Because her form of the disease progresses slowly, she still retains some central vision, although she can no longer drive or even recognize friends unless they're standing right in front of her.

There's nothing medically available to help with the disease, but Ms. Jacobs does what she can to slow its progress. For instance, she takes a vitamin supplement developed especially for eye health. It contains high doses of vitamins C and E, beta-carotene and zinc, all of which have been shown to slow the progression of AMD, as well as significantly reduce the risk in high-risk people.¹⁰

And she remains upbeat. She's structured her life to accommodate her disability, including starting her own business so she could work at her own pace, using special equipment that enlarges print and adjusting her computer screen so she can see images more clearly. "I'm just lucky I'm living at a time when there is all this technology," she says. Additionally, she's thankful for researchers investigating approaches such as stem cell transplants as possible treatments or cures for AMD.

Sunlight—An Eye Enemy

To all the negative effects of global warming, add one more: An increased rate of cataracts. Cataracts occur when soluble protein in the lens of your eye (the transparent structure just behind

the iris) clumps together, making your lens cloudy. About one in every six people 40 and older have cataracts, half of those 80 and older.^{11, 2} Sunlight is a contributor to the development of cataracts. Any reduction in the Earth's protective layer of ozone could increase the amount of certain ultraviolet rays (UV) that reach the eye, significantly increasing the incidence of cataracts in the U.S.¹²

But cataracts aren't the only eye condition caused, in part, by sunlight. Early onset of presbyopia, retinal lesions, sunburn of the cornea (called photokeratitis) and, possibly, the risk of AMD, have also been linked to long-term sun exposure.¹³

Although there aren't any sunscreens developed for eyes (yet!), if you wear contact lenses you're in luck. Today, many brands of contact lenses block harmful UV rays.¹³ "If we were able to get everyone who wears contacts from age 20 to age 60 to wear lenses with UV protection, we'd see a difference in their rate of cataracts after years of use," says clinical trial consultant Robin L. Chalmers, OD.

If you're not a contact lens wearer, however, your best bet is to buy wrap-around sunglasses that transmit no more than one percent UVB and UVA rays. Make sure they're large enough so you don't have light bleeding through the edges of the lenses and forget fancy colors; they can interfere with your ability to recognize traffic signals. Instead, stick with gray or amber lenses.¹⁴

Even if you wear contact lenses, don't toss the sunglasses. The two together are better than either alone and adding a wide-brimmed hat is better yet. Contacts, for instance, still leave certain areas of the eyes uncovered, as well as the eyelids and surrounding areas of the face.¹⁵

Your Eyes and Diabetes

If you have diabetes, your eyes are at special risk. The leading cause of blindness in adults under 65 is diabetic retinopathy, in which small blood vessels in the eyes weaken and burst. The condition affects nearly everyone with Type 1 diabetes and 60 percent of those with Type 2 within 20 years of diagnosis.²³

You're also more likely to develop cataracts and glaucoma, a condition in which pressure builds in the eye, eventually destroying the optic nerve and leading to vision loss.

The good news? Early diagnosis and effective blood-sugar and blood-pressure control can prevent blindness in about 90 percent of cases of diabetic retinopathy.²⁴ As someone with diabetes, it's best to get those screenings from a qualified ophthalmologist. You should be screened immediately upon diagnosis and at least every year thereafter.²⁵

Aging and Your Eyes

If you're over 40, chances are your eyes have suddenly jumped front and center in terms of the attention they demand. No longer can you stare at the computer screen for 15 hours and still feel comfortable, with or without your contacts. If you're nearsighted, you may find yourself whipping your glasses off and squinting as if you were in front of stage lights to read small print. And when it comes to reading books and magazines, well ... if your arms would only grow another 10 inches you'd be fine.

"The normal eye loses its focusing ability as it (and you) ages," explains Jeffrey Anshel, OD, an optometrist based in Carlsbad, CA. It's called presbyopia, and the question isn't if you'll get it, but when. This is one eye condition you can't prevent.

Presbyopia likely results as the lens is less able to move in your eye to help focus. Without the flexibility to expand forward, it becomes difficult for the lens to focus close up.¹⁶

The good news is that we're far from the days when the only solu-

tion was a pair of bifocals or dime-store reading glasses. Today you can find soft and gas permeable contact lenses designed to correct presbyopia, or you can undergo laser surgery.

The most common method of contact lens correction for presbyopia is called "monovision," in which one lens is fitted for close-up vision and the other for distance vision. Sometimes just one lens is needed. If you do a lot of close-up work (like needle-point) or drive a lot, especially at night, this may not be the best option for you.¹⁷

You have other options, however. These include bifocal (for close and distance seeing) or multifocal (for close, intermediate and distance viewing) contact lenses. Be patient with these lenses, however; it may take your brain (and thus your eyes) a week or two to adjust to them.

Rae Skinner, 56, switched to bifocal contact lenses as her presbyopia hit. "It was great," the Portland, OR, woman says. "And the reason it was great was that instead of going into a restaurant and not being able to read the

menu, or having to take out reading glasses, I could easily read what was there."

You might also talk to your eye care professional about surgery. More ophthalmologists are performing laser surgery called "conductive keratoplasty" to try and correct presbyopia. If you have a cataract removed, you can receive intraocular contacts, or contacts implanted in front of the lens, designed to correct presbyopia. Intraocular contacts to correct presbyopia that can be used without cataract surgery are under investigation.¹⁸

But, warns Dr. Chalmers, keep in mind that your presbyopia continues to change as you age. A surgical remedy corrects the condition at one point in time. "That's the really wonderful thing about a contact lens," she says. "You can change the prescription, and you can take it out if the vision doesn't suit you. You can't do that with surgical treatments. I think people forget that."

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Nearly all eye-related diseases and conditions, including dry eye syndrome, age-related macular degeneration, glaucoma and cataracts, are slightly or considerably more prevalent in women.

UV Protection for Your Eyes: Class 1 or Class 2?

As if there weren't enough choices when it comes to contact lenses, here's one more: The level of UV protection. The U.S. Food and Drug Administration classifies contact lenses that protect against UV rays into two categories: Class 1 and Class 2. Class 1 UV-blockers provide the greatest measure of sun protection. Only Acuvue Advance and Acuvue Oasys brand contact lenses offer Class 1 UV-blocking. Other Acuvue contact lenses and some products in the Biomedics line (CooperVision) contain Class 2 UV-blocking, as do Precision UV soft contact lenses (CIBA Vision) and many rigid gas permeable (GP) lenses.

Early onset

presbyopia, retinal lesions, sunburn of the cornea, and, possibly, the risk of age-related macular degeneration, have also been linked to long-term sun exposure.

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Contact Lenses and Dry Environments

Although contacts might be more flexible than surgery, aging eyes along with environmental elements can conspire to make your once-barely-noticeable contacts feel irritating. Perhaps that's why some research shows that just five percent of people 50 and older who need vision-correcting glasses or contact lenses choose contacts.¹⁷

"As we age, our tear film and the surface of our eyes change," explains Dr. Chalmers. Oil-producing glands called *meibomian glands* shrink a little, so you wind up with less oil on the front surface of the tear film.

That means the tear film on the eye evaporates more quickly. Plus, certain medications that we may use more often as we age, such as allergy medications, can be drying.

Contact lens manufacturers have taken note, using new forms of silicone hydrogel to produce lenses that let more oxygen reach the eye and require less liquid to feel comfortable. Several studies find lenses made with these new materials are more comfortable than other forms, significantly reducing dryness.¹⁹⁻²¹

If you spend most of your time in dry environments—airplanes, office buildings, cars, trucks or certain climates—ask your eye care professional about which contact lens products might work best for you, if you wear them.

Whether or not you wear contact lenses, there are things you can do on your own to relieve dry eye discomfort, say eye professionals. Aim air conditioning and heating vents in your car at your feet, not your face, and if you use a computer a lot, make sure you blink frequently. (For more on eyes and computer use, see "Eye-Safe Computing" on this page.) And stay out of smoke-filled rooms. Not only will the smoke dry your eyes, but cigarette smoking can also damage your eyes, contributing to AMD and cataracts.²² You may want to keep extra wetting drops for your contacts on hand or wear your glasses if your eyes become dry.✕

Eye-Safe Computing

"While there's no scientific research that shows that using a computer is any worse on the eyes than anything else you do up close, if you ask any eye doctor if they see patients coming in with more severe problems because they're using computers, they'll say 'sure,'" says Jeffrey Anshel, OD, an optometrist based in Carlsbad, CA. He consults with corporations and trains other optometrists regarding computer-related eyestrain, which can lead to dry, itchy eyes, headaches and blurred vision.

The biggest culprit? Not enough blinking. "Studies find we blink about one-third as much as normal when we're working on a computer than when we're doing normal reading," says Dr. Anshel. So he recommends the 20:20:20 rule: Every 20 minutes take 20 seconds and close your eyes or look 20 feet away. "This breaks up the intensive viewing habits that can cause eyestrain," he says.

Also make sure your monitor is positioned properly. Rather than having it at "eye level," the ideal height is one that enables you to look over the top of the monitor when looking straight ahead.

For more information on preventing and reducing computer-related vision problems, take the "Eye Q's and Views Quiz," www.computerquiz.jnjvision.com.

Resources

American Academy of Ophthalmology
415-561-8500

www.aao.org

Professional organization of ophthalmologists; offers information about eye health, as well as professional journals and an ophthalmologist directory service.

American Academy of Optometry
301-984-1441

www.aaopt.org

Professional organization for researchers and academic optometrists; offers links to several vision-related resources.

American Optometric Association
1-800-365-2219

www.aoa.org

Professional organization of optometrists; includes an optometrist locator service and information on eye conditions and concerns.

Lighthouse International
1-800-829-0500

www.lighthouse.org

Provides information on eye health, vision impairment and vision rehabilitation, including resources for those who care for a visually impaired friend or relative.

National Eye Institute
301-496-5248

www.nei.nih.gov

Government agency that provides patients, professionals and the general public with information on eye diseases and disorders. Includes research results and educational programs.

Prevent Blindness America
1-800-331-2020

www.preventblindness.org

A volunteer organization that provides information on eye diseases and conditions, as well as tips on eye safety, children's eye health and links to news and resources.

Women's Eye Health Task Force

www.womenseyehealth.org

Provides information about women's eye health and about eye diseases more common in women and what causes them.

Laser Eye Procedures

Heard about the latest way to fix your vision? How about an implantable (aka, “intraocular”) contact lens? It’s just the thing for those of us who are so nearsighted we’ve been turned down for common LASIK surgery. It’s just one in a plethora of sight-correction options, however. If you’re considering laser surgery or intraocular lenses, this is not the time to pinch pennies, says Brian S. Boxer Wachler, MD, of the Boxer Wachler Vision Institute in Los Angeles. “You need to seek out the best surgeon you can find, who is usually going to be inversely proportional to the price,” he says. In other words, the better the surgeon, the more the procedure costs. Also keep in mind these procedures are rarely covered by health insurance.

Procedure	What is it?	Best for...	May not be for you if...	Pros	Cons	Cost
Laser-assisted in Situ Keratomileusis (LASIK)	Most commonly performed laser eye surgery. Surgeon creates a flap in the top layer of the cornea, uses laser to reshape the cornea, then replaces flap	Nearsighted people Farsighted people up to +6 diopters Those with astigmatism ²⁶	You are extremely nearsighted ²⁷ You have dry eyes, thin corneas (something only your doctor can tell) or large pupils ²⁸	High success rate (The American Academy of Ophthalmology reports that seven out of 10 patients achieve 20/20 vision, but 20/20 does not always mean perfect vision) ²⁸ Instantaneous results No discomfort Post-surgical haze (halos) virtually unheard of with wavefront-guided lasers	Irreversible Small risk of infection Glare with night driving Dry eye after procedure	\$2,800 to \$3,100 per eye
Photorefractive Keratotomy (PRK)	The outer skin of the cornea is gently removed and a laser applied to the surface of the cornea	Someone uncomfortable with the idea of the flap used in LASIK, or with thin corneas	Same as LASIK	Slightly safer procedure than LASIK	Irreversible Small risk of infection; slightly lower risk than LASIK Typically more discomfort during first day or two of recovery than with LASIK Slight risk of haze if you’re very nearsighted	Approximately the same as LASIK
Limbal Relaxing Incisions (LRI)	Used to treat astigmatism Incision made on the cornea to make it rounder (in astigmatism, the cornea is football-shaped)	Only vision problem is astigmatism	Astigmatism worse than 4 diopters		Irreversible Small risk of infection May be combined with cataract surgery to reduce preexisting astigmatism, thus resulting in improved vision without glasses, ²⁹ resulting in better postoperative vision without glasses. LRIs can be used in people whose primary refractive error is astigmatism	\$2,000 to \$2,500 per eye
Orthokeratology (Ortho-K)	Non-surgical procedure in which the cornea is flattened by wearing special gas permeable contact lenses overnight	Slightly near-sighted people who don’t want or don’t qualify for laser surgery		Non-invasive Reversible	Reports of infections on the rise Effect is temporary and only lasts as long as you wear the contacts at night	About \$1,500 to \$2,500 total cost
Laser Thermokeratoplasty (LTK) and Conductive Keratoplasty (CK)	Similar procedures in which small spots of heat—LTK via a laser and CK via radio frequency—are applied to the circular area in the outer part of the cornea to treat farsightedness and presbyopia	Someone who needs reading glasses but whose distance vision is good		No cutting or tissue removal required Total treatment time about three seconds	You may still need reading glasses for very small print or in poor light ³⁰	\$2,000 to \$2,500 per eye
Intraocular Lenses (IOL)	The newest addition to the vision improvement arsenal, it is a contact lens inserted in the eye in front of the lens ³¹	Someone with healthy eyes who is severely near-sighted but has stable vision	Minor (no more than 2.5 diopters) astigmatism	Painless procedure with instantaneous results Lens may be removed	May increase risk of glaucoma or cataracts Small risk of infection Glasses may still be needed for reading, night driving or in low light	\$3,500 to \$4,200 per eye

Vision Care for Your Kids

When your baby is born, you count her toes and fingers, marvel at her soft skin and try to figure out if the color of her eyes came from you or your husband. But did you ever stop to think about the health of those eyes?

Most visual abnormalities that show up in school-aged children are hard-wired by five years of age,” says Scott Jens, OD, who chairs the American Optometric Association’s (AOA) InfantSEE committee. Catching those problems—including “lazy eye,” or amblyopia, eye muscle imbalances (strabismus), or even a retinal tumor, which affects about one in 20,000 infants—early may enable them to be corrected.

Now, thanks to a partnership between the AOA and The Vision Care Institute of Johnson & Johnson Vision Care, Inc., you can get a free eye exam for your baby between six and 12 months of age. Wondering how you can possibly give an eye exam to an infant who can’t talk or read? No problem. Optometrists and ophthalmologists are well-trained in evaluating vision in people who can’t read an eye chart, whether they are very young children, stroke victims or developmentally disabled adults.

For instance, they might use tools such as gray cards with various sized stripes or pictures on them to see which card the baby prefers to look at and at what distances. A small penlight shone into the infant’s eyes can

assess eye alignment, while depth perception can be measured by using 3-D glasses (like those you get in the movies) and showing the baby 3-D pictures; babies with good eye coordination and depth perception reach out to touch the picture.

None of this hurts the baby, who can perch on a pillow on your lap, and the whole exam takes about 20 minutes.

With rare exceptions, identified problems aren’t treated in such young babies, says Dr. Jens. “Most of these babies are still developing visually, so we try not to affect that development unless it’s extremely necessary,” he said. Instead, the doctor recommends a monitoring schedule to see how things develop between the time of the screening and 21 months of age, when visual development is usually complete.

“That’s an important message,” says Dr. Jens. “I don’t want parents to think that babies come out of these evaluations with glasses. It’s almost always a monitor-and-watch approach to see if the risk status changes.”

To find a participating optometrist in your area, visit www.infantsee.org.✕

Vision and the Elderly

Most serious vision problems, like age-related macular degeneration (AMD), glaucoma, cataracts and diabetic retinopathy, occur in the elderly. While vision loss can be devastating for anyone, it can be particularly demoralizing for an older person, says Ilene Gipson, PhD, a senior scientist at the Schepens Eye Research Institute in Boston.

“Impaired vision and low vision that accrues with age is truly a risk factor for death,” she says. One reason is an increased risk of falling, which can lead to broken bones. Also, if you don’t see well, you become less social, she says, with a “shut-in mentality” that can result in serious psychological issues.

“That’s why it’s so important that women in their older years make sure they keep their vision prescriptions updated and do the best they can in terms of protecting their vision,” says Dr. Gipson.

One simple thing that can help is to put stronger lightbulbs in your lamps and add lighting around your house. One study investigating the effect of lighting on the visually impaired in their homes found a significant improvement in quality of life, as well as in participants’ ability to complete daily tasks.³³

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Commonly Asked Questions About Vision

Q My eye doctor says I have severe astigmatism. What does that mean? Can I still wear contact lenses?

A Astigmatism is a vision condition that occurs when surfaces of the eye, such as the cornea, are oval-shaped like an egg. This prevents light from focusing properly on the back of the eye, called the retina. It's a common vision problem affecting millions of Americans. In fact, about eight out of 10 people have it. It's often found in conjunction with nearsightedness, or myopia, but also can be found in people who are farsighted. It is not related to either condition.

If you have astigmatism, you can most certainly wear contact lenses. Major advances in contact lenses over the past 20 years mean that even people with significant astigmatism can be fitted for lenses. You can even get tinted, disposable and bifocal lenses if you have astigmatism.³²

When you're being fitted for

contacts, make sure your eye health professional provides you with a pair of trial lenses before ordering the final pair. This way, you can make sure the lenses work for you before investing in them.

—Jeffrey Anshel, OD
Optometrist
Carlsbad, CA
President, Corporate Vision Consulting
Encinitas, CA

Q What does a complete glaucoma test consist of?

A Glaucoma is an eye condition that can be caused by high pressure in the eye. Like high blood pressure, it is a silent disease, and without regular eye exams, you may not know you have it until your optic nerve is destroyed and your sight lost. That's why regular eye exams with a qualified ophthalmologist or optometrist are so important. This is particularly important if

you are African American or have a family member with glaucoma.

During the exam, your eye care professional should conduct complete testing for glaucoma. This includes a visual acuity test, i.e., an eye chart test to evaluate your distance vision; a tonometer test, in which a special instrument is used to measure the pressure inside your eye; and a visual field test to measure your side, or peripheral, vision (loss of peripheral vision is a sign of glaucoma).

Additionally, you should receive a dilated eye exam. Drops widen the pupils of your eyes, and the eye care professional uses a magnifying lens to examine your retina and optic nerve for problems. And, finally, you should undergo pachymetry, in which your eye is numbed with drops, and an ultrasonic wave instrument is used to measure the thickness of your cornea. A thin cornea is a risk factor for the development of glaucoma.

—Cynthia Grosskreutz, MD
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10 Things You Can Do for Vision Health

I am constantly amazed by the links between how we live and every aspect of our health. While it's no surprise that your diet and levels of exercise can affect the health of your heart, it probably comes as a shock to learn those factors can also affect the health of your eyes.

In fact, many of the same things that lead to common chronic conditions like diabetes, atherosclerosis and even dementia also play a role in the health of your eyes.

That's why I've come up with the 10-point Eye Health Plan. I'm no eye care expert, but I am a healthy lifestyle expert. Here's what I recommend for protecting your eyes:

- 1. Quit smoking.** If you smoke, you're much more likely to develop age-related macular degeneration, or AMD, than nonsmokers. AMD is the most common cause of blindness in those over 65. And while there are some ways to slow its progression, there is no cure.
- 2. Wear sunglasses and a wide-brimmed hat when you're in the sun.** These two simple steps can reduce your exposure to eye-damaging UV rays up to 18-fold!³⁴ And, if you wear contacts, ask your eye care specialist about contact lenses with UV protection.
- 3. Watch your weight.** What's weight got to do with your eyes? A lot. Being overweight is a major risk factor for developing Type 2 diabetes. And diabetic retinopathy is the

leading cause of blindness in those under 65. Not only that, but the Nurses' Health Study from Harvard Medical School found women with a body mass index of 30 or more (considered obese) were 36 percent more likely to develop cataracts, possibly because of some relation to high blood glucose levels.³⁵

- 4. Take fish oil supplements daily, or eat fish two or three times a week.** There's some evidence that the omega-3 fatty acids found in fish and other foods may reduce your risk of AMD. Conversely, limit the amount of vegetable oil in your diet; there's some evidence it can *increase* your risk.^{36,37}

- 5. Eat three or more servings of fruit a day.** In one study, women who did this reduced their risk of AMD by 36 percent compared to those who ate less than 1.5 servings.³⁸

- 6. Eat your spinach.** What Popeye didn't know was that spinach is a rich source of lutein and zeaxanthin, powerful antioxidants that can reduce the risk of certain eye diseases, like AMD.³⁹ Other good sources include any kind of leafy green veg-

etable such as collards and kale, as well as eggs and orange-colored fruits.

- 7. See your eye care professional for a full vision examination at least once every two years.**

Go more often if you have diabetes or any other eye-related condition.

- 8. Get a 30-minute walk in every day.** There's some evidence that regular exercise can reduce the intraocular pressure in people with glaucoma. In one study, glaucoma patients who walked briskly four times per week for 40 minutes lowered the pressure within their eyes enough so they could stop taking their glaucoma medication.

- 9. Change your eye makeup every three to six months.** That means new mascara, liner and powder. The makeup becomes contaminated with bacteria from your lashes and lids and can infect your eye.

- 10. Don't fall asleep in your daily-wear contact lenses.** In fact, don't ever wear them longer than they're designed to be worn. If you want contacts that you can wear overnight, talk to your eye care professional about whether they are appropriate for you. ✕

To learn more about vision health, visit www.healthywomen.org.