

Flight Surgeon Notes # 7

Age-Related Eye Diseases – continuation

(Flight Surgeon Notes #5 – more detailed information on eye issues)

With aging, there is a universal tendency for men and women to become less physically active. The most common substitutes for this less-athletic life-style involve the core senses of vision and hearing. Reading requires vision. Television is a visual past-time. With advancing age, our perception of the world around us is predominately determined by vision and hearing. Much of the joy of conversation with friends, associates and loved-ones is determined by vision. I have always been an obsessive-compulsive reader. My quality of life would be considerable reduced with loss of vision. Hearing loss is a separate topic, but most of the time this can be somewhat corrected by hearing aids. Visual problems are a bit more complicated and deserve special consideration.

The following is a list of the most common problems of aging that involve vision.

Presbyopia is loss of ability to see close objects or small print. Usually symptoms begin after age 40. It is commonly noted by requiring you to hold the printed page further and further away to bring print into focus. Occasionally, it is accompanied by headaches or “tired eyes” while reading or while performing other close work. This can *usually be corrected by reading glasses*. Since the condition is due to age-related hardening of the lens, it may ultimately terminate in **cataracts** after many years.

Floaters are tiny spots or specks that “float” across the field of vision. They may be noticed in well-lit rooms or outdoors on a bright day. Usually these are of no clinical significance and of little concern. However, if they are accompanied by flashes of light or an increase in number, consult your eye doctor promptly. This could be an early sign of **retinal detachment**.

The four Major Age-related Eye Diseases

By age 65, one in three Americans has some form of vision-impairing eye condition. There are **four major age-related eye diseases** (AREDs) that affect seniors. Learning about the symptoms of and treatments for each of these conditions can help you protect your vision and that of an aging loved one.

1. Glaucoma: Glaucoma occurs when the pressure within the eye is elevated. This can damage the optic nerve and result in vision loss and blindness. There usually are no initial symptoms, so as many as one million people may have glaucoma without realizing it. This condition is one of the main causes of blindness in the United States. Glaucoma Can Steal 40% of Vision before a Person Notices the problem

At first, glaucoma yields no obvious symptoms. However, as the disease progresses, a person with glaucoma may notice their side or peripheral vision gradually failing. It is easy to ignore the first symptoms since to compensate for loss of peripheral vision, a person will simply look more directly at objects. (These symptoms of worsening tunnel vision are the same experienced while undergoing G-forces in the F-4C Phantom. On one dive-bomb mission, I developed these symptoms when my G-suit became unplugged. Had I not fixed the problem, I would have lost consciousness.)

There are many different types of medications (in eye drop and pill form) that are used to treat glaucoma. In some people, however, medications alone do not successfully control increased eye pressure, and surgery needs to be performed. One type of surgery called **trabeculoplasty** uses a laser to improve the flow of fluids out of

the eye, thereby reducing pressure. This can be done in your doctor's office. There is also conventional surgery called **trabeculectomy**, in which your doctor creates a new drainage path under the eyelid.

Risk factors for glaucoma include age, family history of glaucoma, the use of steroid medications and near-sightedness.

2. Cataracts: A cataract is clouding of the eye's usually transparent lens. The lens is composed of water and protein, but if the protein clumps together, it can start to obscure transmission of light through the lens. If the cataract worsens and begins to severely affect vision, surgery may be necessary to remove the cloudy lens and replace it with a new one. People with cataracts often complain about glare, cloudy/fuzzy vision, and double vision in one eye or halos around lights. Surgery is the only way to correct vision loss caused by cataracts. Getting older is a major risk factor for cataracts, and women are at slightly higher risk than men. People who smoke, do not protect their eyes from the sun and have a family history of cataracts are more likely to develop them as well. Surgery with replacement of the lens is a miracle of modern medicine. An out-patient procedure, performed with eye-drops for anesthesia, will provide visual acuity that is far better than normal vision if the eye is otherwise healthy.

3. Macular Degeneration: Macular Degeneration (**MD**) diminishes sight in a dramatic way: It affects one's central vision. Although people with **MD** rarely go completely blind because of it, many find it difficult to read, drive and perform other daily functions. This condition affects the macula, an area at the center of the retina that is responsible for focused, central vision. In the early stages of **MD**, there are usually no visual symptoms. A person's central vision will eventually appear wavy or blurry, and in advanced cases it may disappear completely. However, peripheral vision usually remains intact because the rest of the retina is still healthy. Even with some remaining vision, it can still be difficult for those with **MD** to detect fine details and colors. **MD** is considered an incurable eye disease, but there are a few treatments that can help slow its progression. People with macular degeneration can be treated with laser surgery and anti-angiogenic drug injections. Low-vision devices are also helpful for maintaining an active and independent lifestyle in spite of visual changes. Age is the biggest risk factor for developing **MD**. It is estimated that 6.5 percent of Americans age 40 and older have some degree of **macular degeneration**. Family history, race (whites appear to have a higher risk than blacks or Hispanics), high blood pressure and smoking are other risk factors.

4. Diabetic Retinopathy: This potentially blinding disorder is a complication of diabetes. Diabetes causes abnormal changes in the retina's blood vessels, causing them to become leaky and grow where they should not. These new vessels tend to break and bleed. As they try to heal, the damaged blood vessels will contract and detach the retina. Symptoms of diabetic retinopathy include shadows or dark objects that appear to "float" across your field of vision, blurred or distorted vision, partial loss of vision and pain in the eye. Consistently high blood sugar and high blood pressure are associated with retinopathy. There is no cure for diabetic retinopathy. However, laser treatment (photocoagulation) is usually very effective at preventing vision loss if it is done before the retina has been severely damaged. Surgical removal of the vitreous gel (vitrectomy) may also help improve vision if the condition is caught early enough.

Eye Tests Every Senior Should Have

Age-related eye diseases are diagnosed and treated after an exam performed by an **ophthalmologist**. A comprehensive eye exam should include at least the following three tests. 1. **Visual acuity test:** The familiar lettered eye chart measures how well you see at various distances. 2. **Pupil dilation:** Drops are placed in the eye to widen the pupil. This allows the doctor to view more of the retina and look for signs of disease. After the

examination, close-up vision may remain blurred for several hours. 3. **Tonometry:** This test determines the fluid pressure inside the eye, and there are many methods of doing so. An “air puff” test is the most common way to screen for high intraocular pressure. It is a painless process in which a small jet of air is shot against the cornea. Other more involved tests may be required to obtain more accurate readings.

Most age-related eye conditions must be detected and treated early on to prevent lasting damage. A comprehensive eye exam is recommended every one to two years, depending on a person’s age and unique risk factors. These exams are vital for catching diseases like glaucoma and MD that have no obvious symptoms in the early stages. If you or a loved one is experiencing noticeable changes in vision, it is crucial to make an appointment for an eye exam as soon as possible.

An **ophthalmologist** is a medical doctor who can perform **medical and surgical interventions for eye conditions**. An **optometrist** is an eye doctor that can examine, diagnose, and treat your eyes. An **optician** is a professional who can help fit eyeglasses and contact lenses.

Future columns will note other issues of aging. Suggestions are welcome!

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