

Information From Your Eye M.D.

SMOKING, HYPERTENSION AND YOUR EYES

An estimated 46.2 million or 22.6 percent of adults (18 and older) currently smoke cigarettes. Cigarette smoking has been linked to death due to lung cancer and emphysema. It also has been a contributing factor to other diseases, including heart disease and stroke.

Hypertension (high blood pressure) affects about 50 million Americans and one billion people worldwide. Hypertension causes serious complications, such as heart disease and stroke.

Can smoking or high blood pressure affect my vision?

Yes. Both smoking and hypertension are risk factors for several types of potentially blinding eye conditions, including retinal vascular occlusions, ischemic optic neuropathy, diabetic retinopathy and age related macular degeneration.

How do smoking and high blood pressure harm my eyes?

High blood pressure can damage blood vessel walls. Buildup of fatty material (plaque) or blood cells in the damaged areas can eventually clog the blood vessel. Smoking increases the stickiness of blood cells, which increases chances of blood vessel buildups and clogs. Blood vessel clogs, or "retinal vascular occlusions" can cause visual loss. These effects can be more severe in pregnant women or those who use "the pill" for birth control especially if they smoke. Smoking and high blood pressure also worsen the blood vessel disease that develops in people with diabetes.

Can smoking worsen AMD?

Smoking is the single most consistently documented risk factor associated with visual loss in AMD. Twin studies have demonstrated that approximately one third of the risk of developing advanced AMD may be due to smoking. Smokers are 5 times more likely to develop advanced AMD with visual loss than non-smokers. In addition, a gene variant known as Y402H has recently been found to increase the odds of developing AMD. As a predisposing factor, it may explain up to 50% of the cases of AMD. More important however, is that people with Y402H who smoke increase their odds of visual loss of 34 times that of non-smokers without Y402H. These are significant findings which demonstrate that genetic susceptibility to AMD couple with a modifiable lifestyle factor, smoking, confers a significantly higher risk for disease than either factor alone.

What is a retinal vascular occlusion?

Blood is delivered to the retina by tiny arteries and veins. Both arteries and veins may become clogged or occluded by buildup in the blood vessel wall, sticky or "thick" blood, or a combination of both.

Retinal artery occlusion causes rapid visual loss, obstructing the vision, almost like a “curtain” coming over part or all of the eye. Sometimes, the curtain may come and go, lasting less than five minutes before becoming permanent. Artery occlusion in the retina, which is actually made of nerve cells similar to those in the brain, is like a stroke in the eye. When little or no blood reaches the retina, it has no nourishment and can not survive. Damage develops within hours. In most cases because part of the retina has actually stopped functioning or died, the damage and the visual loss, are permanent. It is very rare for the clog to pass quickly enough for the eye to recover and work properly again. There is no known treatment to restore vision.

In a retinal vein occlusion blood and fluid “back-up” in the retina, in much the same way water backs up in a sink with a clogged drain pipe. Visual loss may be mild or severe, depending on how much fluid and blood backs up. In some cases, treatment using a laser may be useful in reducing the edema (swelling) and improving vision. Other treatments, including experimental surgeries and medications, are being investigated.

What is ischemic optic neuropathy?

The optic nerve carries images from the retina to the brain similar to the way a telephone wire carries sound. The vessels that bring blood to the nerve can also become clogged as a result of smoking or high blood pressure. When the optic nerve is damaged because of lack of blood, this is known as ischemic optic neuropathy.

Does hypertension affect macular degeneration?

Other known AMD risk factors include hypertension and obesity. Chances for developing advanced macular degeneration were twice as high in overweight persons and this risk was even higher in those who were overweight and who had the Y402H gene variant.

What should I do if I am smoking or have high blood pressure?

Your Eye M.D. recommends you work with your primary physician to control blood pressure and stop smoking in order to lessen the chances of developing blindness from retinal vascular occlusion, ischemic optic neuropathy, age related macular degeneration and diabetic retinopathy.

If vision loss develops, see your Eye M.D. immediately.

Where Can I Get More Information?

Your Eye M.D. is the best source of information on retinal vascular occlusion and ischemic optic neuropathy, as well as eye health and safety.

If you would like more information, please visit the American Academy of Ophthalmology’s public information Web site at www.medem.com/eyemd.

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