

## **Optic Nerve Drusen**

The optic nerve is the major nerve structure that connects the eye to the brain. The optic nerve is responsible for sending electrical signals to the brain which in turn, allows one to see. In effect, if the eye is a camera and the brain is a computer, the optic nerve is the cable that connects the camera to the computer. The optic nerve basically “plugs into” the back of the eye and is responsible for delivering visual images to the brain.

Optic nerve drusen is a condition where deposits of hyaline-like material are present at the head of the optic nerve. The optic nerve head is the anterior-most portion of the nerve which is directly visible when the inside of the eye is examined. Optic nerve drusen occur in roughly 1% of the population. People who have optic nerve drusen are almost exclusively Caucasian. Optic nerve drusen are usually bilateral (roughly 80%), can be inherited (autosomal dominant) appear equally in males and females, and can be detected at any age. The cause of this deposition is unknown.

Surface (superficial) drusen appear as irregular, glistening yellow globules. Deep drusen are buried and are not as obvious. Deep drusen can give the illusion that the optic nerve head is swollen; a condition known as pseudopapillema. This must be distinguished from actual swelling of the optic nerve, a far more serious condition known as papilledema.

Optic nerve drusen are painless and generally asymptomatic. Visual loss may occur from compression of the adjacent optic nerve fibers, constriction of blood flow or from localized hemorrhages. Visual field (peripheral vision) defects can occur. These include enlargement of one’s normal “blind spot” and defects or constriction of one’s peripheral vision. Although significant visual field (peripheral vision) loss is possible, actual loss of visual acuity (central vision) from optic nerve drusen is extremely rare. Occasionally pressure lowering eye drops are prescribed to reduce the physical burden on the optic nerve fibers. If this condition is advanced, in order to support blood flow to the optic nerves, you may be advised to take a blood thinner such as an Omega 3 supplement (Pro-Omega 2000) or Baby Aspirin (81mg) once daily and to avoid any significant drop in blood pressure or blood flow to the optic nerves. For instance, if surgery is planned you should discuss this precaution with your surgeon and anesthesia provider preoperatively.

Should optic nerve drusen be detected on an eye exam, stereoscopic digital photographs are taken of each optic nerve. In addition, optical coherence tomography (OCT) is performed to confirm the condition and to distinguish it from true swelling of the optic nerve head (papilledema). Lastly, visual field testing is performed in order to determine if the central or peripheral vision of either eye has been affected. Occasionally, a head/orbit MRI and intravenous fluorescein angiography are performed for further analysis.

In conclusion, optic nerve drusen may be detected on a routine eye exam. The vast majority of patients who have optic nerve drusen are without symptoms and do not have any visual problems whatsoever. Once detected, yearly eye exams with digital photography as well as yearly OCT and visual field testing are strongly recommended.

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