

OPTONOL Ltd.

Advancing Medical Technologies

How It Works

Ex-PRESS™

The potential to be a significant advance in glaucoma treatment

GLAUCOMA, also known as “high eye pressure”, is a serious disease characterized by damage to the optic nerve, with consequent visual loss, initially peripheral, but potentially blinding if relentlessly progressive.

Unfortunately, glaucoma is usually a disease in which the patient is entirely asymptomatic (without symptoms) until too-late in the disease process.

Glaucoma affects three million Americans; half are unaware they have the disease. Approximately 10 million Americans have elevated eye pressure (intraocular pressure, or “IOP”), which places them at risk for the development of glaucoma. One hundred thousand Americans are already blind from the disease. African-Americans have a five-fold greater risk of developing glaucoma and, in this population, it is the single most common cause of irreversible blindness.

Glaucoma, preceded by elevated IOP, is the leading cause of preventable blindness. IOP is determined by a balance of the eye’s production and drainage of aqueous humor (the clear fluid inside the eye) from the anterior chamber into the

trabecular meshwork. Over time, the elevated pressure causes damage to the optic nerve.

When glaucoma continues to progress despite use of medications and possibly laser treatments, a glaucoma filtration procedure (*trabeculectomy*) may be recommended.

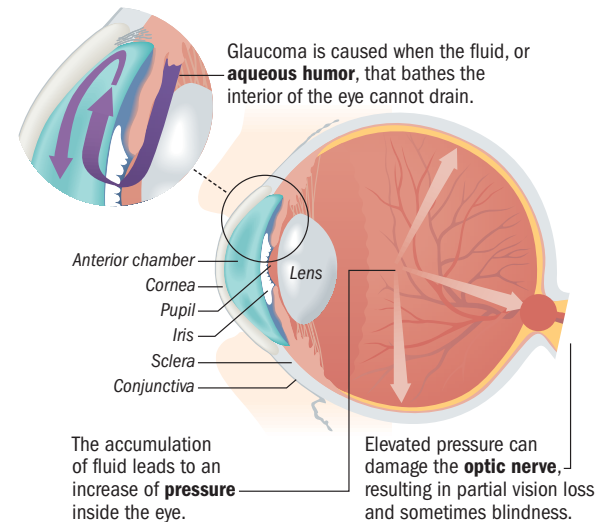
The one-hour procedure is performed in an operating room, usually under local anesthesia. The goal of trabeculectomy, which requires a very large incision, is to create a new passageway by which aqueous fluid inside the eye can escape, thereby lowering the pressure. The hole allows the drainage of fluid from inside the anterior chamber of the eye to a “pocket” created between the conjunctiva and the sclera. The fluid is eventually absorbed by blood vessels.

BREAKTHROUGH
Now there is a less invasive alternative to trabeculectomy to reduce IOP, thanks to a novel device called the Ex-PRESS™ Mini Glaucoma Shunt, from Optonol.

The Ex-PRESS is inserted into the anterior chamber under a scleral flap at the limbus. This technique enables increased resistance to aqueous flow in the early postoperative

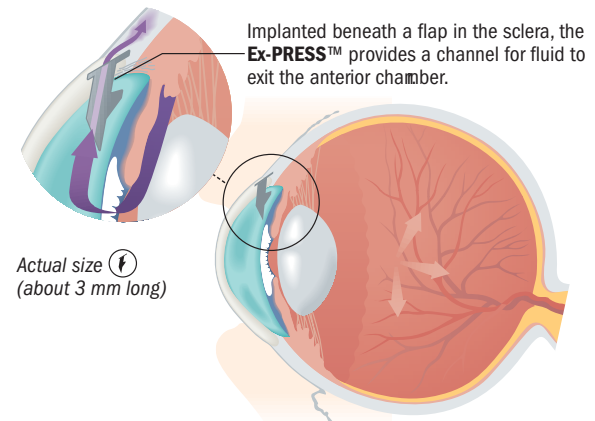
Simplifying glaucoma treatment

THE PROBLEM: Elevated eye pressure



THE SOLUTION: Creating a drain

Pressure can be relieved by creating a path for the excess fluid to drain from the eye. In standard glaucoma surgery, trabeculectomy, this involves punching a hole through the eye tissue. The Optonol **Ex-PRESS™** provides a simpler, less invasive way of achieving these results.



stages.

“The Ex-PRESS™ glaucoma implant...was designed with the intention of offering a fast and simple glaucoma operation ... The Ex-PRESS™ device appears biocompatible and its (microscopic-sized) structure ensures minimal tissue trauma ... The operation is similar to the standard tra-

beculectomy except that there is no need for an iridectomy and no removal of scleral tissue ... Aqueous outflow is limited in a predictable way ... These differences may present advantages over (the gold) standard trabeculectomy.” (*Journal of Glaucoma*, Volume 14, Number 2, April 2005)