What is ab-interno Canaloplasty?
Ab-interno Canaloplasty is a new MIGS procedure, which achieves similar IOP-lowering effects to traditional (ab-externo) Canaloplasty in patients with mild-to-moderate POAG.

What happens during the procedure?
During the ab-interno Canaloplasty procedure, Goniotomy, 360° cannulation and visco-dilation of Schlemm’s canal with the iTrack™ (250A) microcatheter are performed. Once the distal end has circumnavigated to the point of entry the iTrack™ is slowly withdrawn, while Healon/Healon GV is emitted upon single clicks of the visco-injector knob.

What parts of the outflow system are affected by ab-interno Canaloplasty?
Like traditional Canaloplasty, ab-interno Canaloplasty addresses all aspects of potential outflow resistance, including the trabecular meshwork, Schlemm’s canal and the collector channels.

What is the mechanism of action of ab-interno Canaloplasty?
The rationale behind ab-interno Canaloplasty is the same as traditional Canaloplasty, where visco-dilation acts as a form of angioplasty, re-establishing aqueous outflow after opening up the sites of outflow resistance. Visco-dilation allows the compressed tissue planes of the trabecular meshwork and sclera to separate, and any herniated trabecular meshwork tissue to withdraw from the collector channels. This process of visco-dilation breaks adhesions within Schlemm’s canal, enlarging the entire canal by up to three times its normal size, thus promoting patency within Schlemm’s canal as well as the collector channels. This, in turn, restores the “natural” outflow system without ever involving the conjunctiva or creating a bleb.

What is the importance of visco-dilation?
Studies undertaken in human and bovine eyes by Haiyan Gong, MD, PhD (University of Boston), have shown that when inner wall tissue of Schlemm’s canal herniates into the collector channels, it blocks aqueous outflow. Canaloplasty, in both ab-interno and ab-externo approaches, is the only currently available procedure that addresses blockages in the collector channels.

How does ab-interno Canaloplasty differ to other MIGS procedures?
- Ab-interno Canaloplasty is the only MIGS procedure that successfully and comprehensively addresses all aspects of potential outflow resistance. Currently available MIGS procedures, in contrast, lower IOP by addressing different single aspects of (rather than all aspects of) the ocular outflow system.
- The Trabectome® uses an electrosurgical pulse to ablate the trabecular meshwork and inner wall of Schlemm’s canal.
- The iStent® works as a trabecular micro-bypass by allowing aqueous humor to flow directly from the anterior chamber into Schlemm’s canal, thus circumventing the trabecular meshwork.
- The Hydrus™, an 8mm long device, is inserted into Schlemm’s canal to improve ocular outflow from the anterior chamber to Schlemm’s canal, thereby acting as an intracanalicular scaffold.
- The CyPass Suprachoroidal Microstent (an investigational MIGS device) facilitates outflow from the anterior chamber to the suprachoroidal space.
- The Aquesys Subconjunctival Implant (an investigational MIGS device) is placed into the subconjunctival space to create a filtering bleb.
Canaloplasty) is routinely performed in 10-15 minutes. The ab-interno Canaloplasty aspect takes approximately five minutes to perform.

What is the role of the suture in Canaloplasty?
The tensioning suture employed in traditional Canaloplasty, to provide added longevity, is not used in ab-interno Canaloplasty. A review of three-year data by Lewis et al indicates that 360° visco-dilation alone, i.e. Canaloplasty without a suture, successfully lowers IOP.

What is the reimbursement for ab-interno Canaloplasty?
CPT Code 66174 - Canaloplasty w/o Stent (i.e. no 9-0 Prolene stent).
1. Surgeon Fee: $1,005.90 (national average)
2. ASC Fee: $1,677.90 (national average)
3. HOPD Fee: $3,037.37 (national average)
The reimbursement for ab-interno Canaloplasty is higher than current MIGS procedures and can be billed as a combination procedure (ECCE & Canaloplasty w/o Stent).

Additionally, the procedure is on label and patients are not required to pay any out-of-pocket expenses.
Note: Ellex has contracted The Reimbursement Group (TRG) to help facilitate the reimbursement claim process for all Canaloplasty surgeons. If a claim is unsuccessful with a third-party insurer, simply contact TRG toll free at (866) 274-3220 and their team of claim specialists will provide free, timely support in order to secure your payment, managing all form submissions, as required.

AB INTERNO CANALOPLASTY: Q&A

Is ab-interno Canaloplasty performed during cataract surgery?
Ab-interno Canaloplasty is most frequently performed in conjunction with phacoemulsification; however, it is not limited to the combination procedure and may be performed alone.

What are the clinical results of ab-interno Canaloplasty?
Preliminary results of a 70-eye case series by Mark J. Gallardo, MD (El Paso Eye Surgeons, PA) show that ab-interno Canaloplasty may offer better clinical outcomes than any other currently available MIGS procedure:

- Mean pre-operative IOP was 20.3 ± 5.8 mm Hg. At one, three and six month post-treatment, mean IOP was 14.3 ± 3.7 mm Hg, 13.0 ± 3.6 mm Hg and 12.3 ± 3.8 mm Hg, respectively.
- Mean pre-operative number of medications was 2.4 ± 0.9. At one, three and six month post-treatment, mean number of medications was 0.5 ± 0.9, 0.5 ± 0.9 and 0.5 ± 1.0 respectively.
- In pseudophakic patients, mean IOP improved from 21.8 ± 5.2 mm Hg at baseline to 15.1 ± 4.1 mm Hg at one month post-operative.
- Case observation of ab-interno Canaloplasty revealed that the safety profile of the procedure was similar to that of traditional Canaloplasty and the newer MIGS procedures.

How long does ab-interno Canaloplasty take?
Ab-interno Canaloplasty is fast and easy to perform. The combined procedure (phacoemulsification and ab-interno Canaloplasty) is routinely performed in 10-15 minutes. The ab-interno Canaloplasty aspect takes approximately five minutes to perform.