

Microinvasive Glaucoma Surgery (MIGS)

by the AGS Patient Engagement Subcommittee

Why would you need Microinvasive Glaucoma Surgery (MIGS)?

- MIGS includes newer procedures that can lower your eye pressure or reduce your need for eye drops.
 - In glaucoma, your eye pressure can be too high for your eye. This can cause damage to your optic nerve (the cable that connects your eye to your brain) and cause permanent vision loss.
 - Unfortunately, there is no way to get back the loss of vision that has already happened. But lowering your eye pressure can prevent more damage.
 - Traditional glaucoma surgeries involve creating a new drainage pathway using your own tissues (trabeculectomy) or placing a tube in your eye (glaucoma drainage device). These traditional surgeries have a longer recovery time and potentially higher risk compared to MIGS procedures.
- MIGS includes a growing group of eye procedures that can lower your eye pressure. They involve less cutting, shorter recovery time, and lower risk.
- These procedures may not lower your eye pressure as much as traditional glaucoma surgeries, but they are less invasive.
- Your glaucoma doctor will recommend the best procedure for you based on your glaucoma and eye examination.

What are the different types of MIGS procedures? How are they performed?

We currently have the following types of MIGS. Your eye surgeon will decide which MIGS is best for you. The MIGS procedure may be done at the time of your cataract surgery or as a separate procedure.

- The **iStent inject** or **iStent infinite** contains 2 (iStent inject) or 3 (iStent infinite) tiny metal devices placed in your eye's natural drainage system. The iStent is about the size of one letter on the face of a penny.
- The **Hydrus microstent** is a tiny curved metallic tube placed in your eye's natural drainage system. The Hydrus microstent works by improving the flow of fluid from the front of the eye through the drainage channel. The microstent maintains the opening of the drainage pathway. This allows fluid to pass through the drainage pathway to help lower your eye pressure.
- **Goniotomy** is a procedure that involves opening a portion of the natural drainage system. This allows fluid to leave your eye more easily and lowers your eye pressure. This can be done with many surgical tools, including iAccess, iPrime, Kahook Dual Blade, OMNI, SION, and Trabectome.

- **Canaloplasty** is a procedure that involves flushing a gel substance through the natural drainage system of your eye to dilate the drain and open up blocked areas. This allows fluid to leave your eye more easily and lower your eye pressure. This can be done with different surgical tools, including iPrime, iTrack, OMNI, and Streamline.
- The **XEN gel stent** is a small tube (made from porcine “pig tissue” and is about the length of an eyelash) that creates a small channel in your eye to drain fluid from the front part of your eye to the space under your conjunctiva, which is the thin clear layer covering the white part of your eye. The XEN gel stent becomes soft and flexible after it is placed in the eye. The stent stays in the eye permanently. This type of surgery usually has more risk than the other surgeries listed above and is not a true “MIGS,” but it is slightly safer than traditional glaucoma surgery.

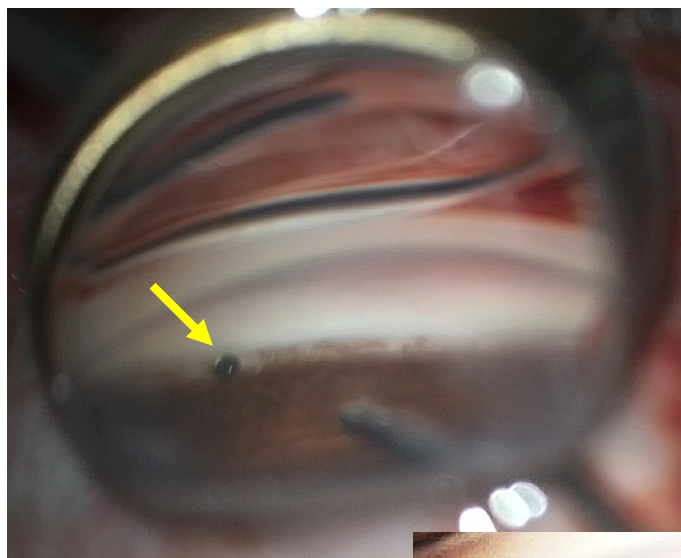


Figure 1

The photos show an iStent device placed through the trabecular meshwork into the drain of the eye, called Schlemm's canal. Photo courtesy of Dr. Lawrence Geyman and his patient.

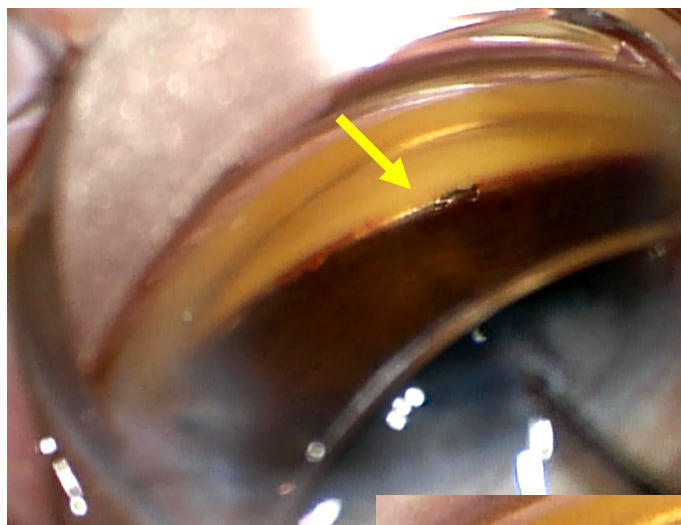
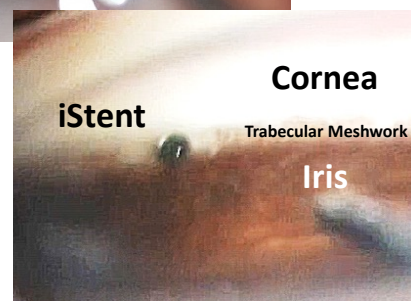


Figure 2

The photos show a Hydrus device placed into Schlemm's canal. Photo courtesy of Dr. Michael Lin and his patient.



For MIGS surgery, the doctor uses a special lens to see the drain of the eye. This lens is called a gonioscope or gonioscopy.

What to expect during and after the procedure

- The surgery is done in the operating room with anesthesia to relax you and numb your eye so you don't feel pain. Most patients stay awake for the surgery but get medicine to help them feel relaxed and comfortable.
- After the surgery, you will go home the same day with a patch or shield over your eye. Someone will need to drive you home. You usually need to see your eye surgeon later that day or the next day and several times over the following weeks and months.
- Your vision may be blurry for a few days or weeks after the surgery.
- Eye drops: Your eye surgeon will usually start eye drops that need to be used for a few weeks after the surgery. Your eye surgeon will also talk with you about whether you need to continue your glaucoma drops.
- Activity restrictions after surgery include:
 - No bending over in a way that your head is lower than the level of your heart.
 - No heavy lifting - nothing heavy enough to make you strain or hold your breath to lift.
 - No eye rubbing.

What are the risks of MIGS?

Like any surgery, there are risks with MIGS:

- infection
- bleeding during or after the procedure
- eye pressure being too low or staying too high
- possible need for more surgery

Your doctor will recommend this surgery if he or she thinks the risk of surgery is lower than your risk of losing vision from glaucoma.

Summary

MIGS includes eye procedures that can lower your eye pressure. They involve less cutting and have a faster recovery time. The MIGS procedure may be done at the time of your cataract surgery or as a separate procedure.



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