Summary of Safety and Clinical Performance

Device Name: PRESERFLO MicroShunt

Manufacturer: InnFocus, Inc.

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SUMMARY OF SAFETY AND CLINICAL PERFORMANCE (USERS)

Document revision:
Date issued:

This Summary of Safety and Clinical Performance (SSCP) is intended to provide public access to an updated summary of the main aspects of the safety and clinical performance of the device.

The SSCP is not intended to replace the Instructions for Use (IFU) as the main document to ensure the safe use of the device, nor is it intended to provide diagnostic or therapeutic suggestions to intended users or patients.

The following information is intended for users/healthcare professionals. Following this information there is a summary intended for patients.

1 Device Identification and General Information

1.1 Device Trade Name(s)

PRESERFLO™ MicroShunt

1.2 Manufacturer's Name and Address

InnFocus, Inc.
12415 S.W. 136 Avenue, Unit 3
Miami, Florida, 33186
USA

1.3 Manufacturer's Single Registration Number (SRN)

SRN: US-MF-000003951

1.4 Basic Unique Device Identification System – Device Identifier (UDI-DI)

GLT001 – UDI #04987084315700

GLT001L – UDI #04987084319845

1.5 Medical Device Nomenclature

EMDN: Q0208 - Glaucoma Drainages and Kits

1.6 *Class of Device*

Pursuant to Annex VII Classification Rules in the European Medical Device Regulation 2017/745, the PRESERFLO MicroShunt is a Class IIb per Rule 8. The device is an implantable device for long term implantation

1.7 Initial Year of Certification

The PRESERFLO MicroShunt received initial CE marking 2012.

1.8 Authorized Representative, if applicable

EMERGO EUROPE
Westervoortsedijk 606827 AT Arnhem, The Netherlands
SRN: NL-AR-000000116

1.9 Notified Body Name/Single Identification Number

TÜV SÜD

CE number 0123

2 Intended Use of the Device

2.1 Intended Purpose/Use

The PRESERFLO MicroShunt employs a tube to create a conduit for the flow of aqueous humor from the anterior chamber of the eye to a bleb formed under the conjunctiva and Tenon's capsule; the front end of the tube extends into the anterior chamber while the back end terminates in the bleb. The PRESERFLO MicroShunt reduces IOP by physically shunting aqueous from the high-pressure anterior chamber to the lower-pressure bleb.

2.2 Indication(s) for Use and Target Population(s)

2.2.1 Indications for Use

The MicroShunt is intended for reduction of intraocular pressure in eyes of patients with primary open angle glaucoma where IOP remains uncontrollable while on maximum tolerated medical therapy and/or where glaucoma progression warrants surgery.

2.2.2 Intended Patient/Target Populations:

The target patient population are adult patients who are 18 years of age or older with open angle glaucoma where IOP remains uncontrolled while on maximum tolerated medical therapy and/or where glaucoma progression warrants surgery.

2.2.3 Contraindications and/or Limitations

The implantation of the MicroShunt is contraindicated under the following circumstances and conditions:

Angle Closure Glaucoma; presence of conjunctival scarring, previous incisional ophthalmic surgery involving the conjunctiva or other conjunctival pathologies (e.g., thin conjunctiva, pterygium) in the target quadrant; active iris neovascularization; active inflammation (e.g., blepharitis, conjunctivitis, scleritis, keratitis, uveitis); vitreous in the anterior chamber; presence of an anterior chamber intraocular lens (ACIOL); intraocular silicone oil

3 Device Description

3.1 Device Description

The PRESERFLO MicroShunt (hereinafter MicroShunt) is a single use subconjunctival glaucoma drainage implant device that reduces intraocular pressure by physically shunting aqueous from the high-pressure anterior chamber to the lower pressure bleb.

The device consists of the MicroShunt, an extremely small micro-tube (about twice the size of an eyelash) that shunts aqueous fluid from the anterior chamber of the eye to a sub-conjunctival/sub-Tenon space, and the Scleral Marker. See below for images of the MicroShunt and the Scleral Marker.

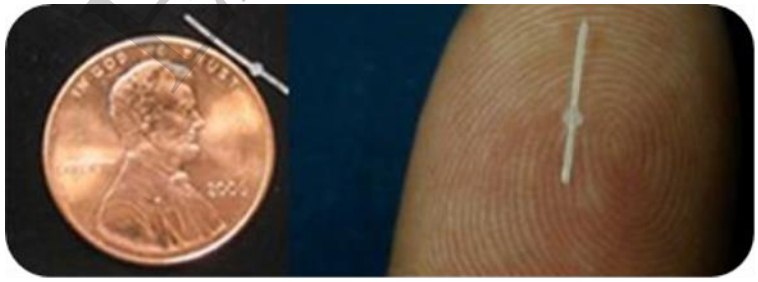

Figure 1:PRESERFLO™ MicroShunt

3mm Scleral Marker

4mm Scleral Marker

Figure 2

Scleral Marker (3-20mm Scleral Marker & 4-20mm Scleral Marker)

The MicroShunt is a long-term implant. The principal mode of action is mechanical; the MicroShunt device is a drainage implant that shunts the aqueous fluid into a lower pressure bleb.

The implant device is made from a unique ultra-pure atraumatic biomaterial called “SIBS” (styrene-block-isobutylene-block-styrene), designed specifically for implant application and not to degrade in the body, thereby minimizing the foreign body reaction. More specifically, “SIBS” is a material which has been used in implanted medical devices for over 20 years. The Scleral Marker is a disposable device made from stainless steel.

The MicroShunt and the Scleral marker are single-use devices and sterilized using Ethylene Oxide.

The physical configurations of the PRESERFLO MicroShunt device are shown below. There are 2 length sizes; an 8.5mm and 11mm version. The lumen of the device is approximately 70 microns in diameter with an outer diameter of 350 microns and is designed to allow aqueous

flow from the anterior chamber to a bleb (blister- like formation below the conjunctiva/Tenons) equivalent to the average flow from a healthy human eye of 2-3 microliters/minute at 5mmHg.

See below in Figures 3 for the PRESERFLO™ MicroShunt dimensions.

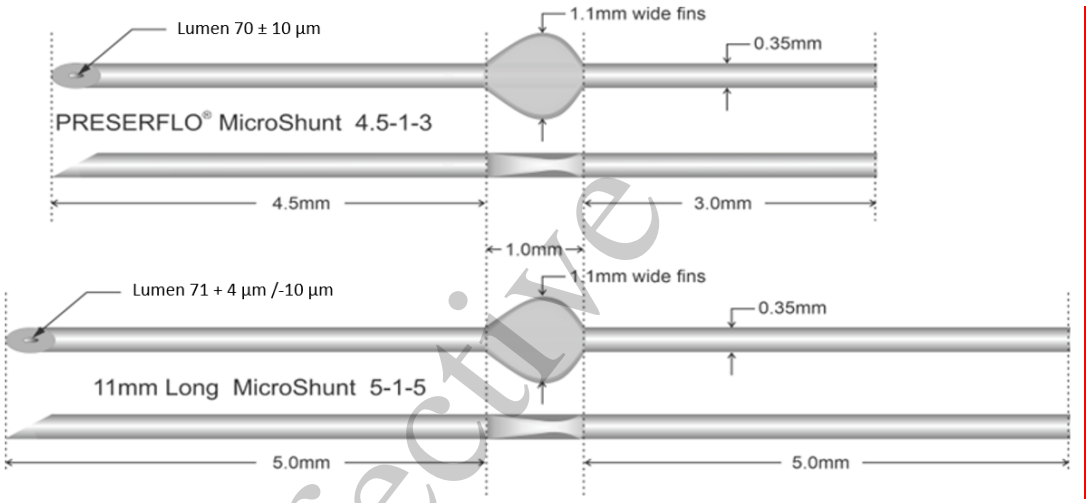

Figure 3: PRESERFLO™ MicroShunt
(All dimensions in mm)

The single-use, disposable 3-20mm or 4-20mm Marker (Scleral Marker) accessory (Figure 2) is designed to create a mark on the sclera 3mm (or 4mm with the 4-20mm Marker) from the limbus to identify the starting location for the creation of the scleral track into the anterior chamber.

3.2 Previous generation(s) of same device (if applicable)

There are no previous generations of the MicroShunt.

3.3 Accessories intended to be used in Combination

The MicroShunt does not have any accessories which are intended to be used in combination with the device.

3.4 Other Devices/Products intended to be used in combination (if applicable)

The MicroShunt is distributed as a standalone device or may be distributed in "procedure pack" configurations. In addition to the standard devices commonly used in ocular surgeries, recommended accessories for the surgical procedure associated with the MicroShunt implantation include the following:

a. Marker Pen – Gentian Violet (1)

b. Anterior Chamber Cannula 23G 8mm bend (1)

c. MANI Ophthalmic Knife Slit-Angled 1.0mm Knife (1)

or

Ophthalmic Knife Double Step-Angled 1.0mm Knife (1)

d. Sponges (3) and

e. Sclera Track Needle 25g x 5/8 (25G Needle) (1)

Note: The review period associated with this SSCP is defined as follows:

- Literature published between January 2012 to December 31, 2023 identified through literature searches. These searches were conducted for safety and performance data associated with the MicroShunt, relevant literature to evaluate current knowledge and *state of the art*, and manually identified articles and clinical practice guidelines, (55 publications were identified).
- Four clinical Investigations conducted by InnFocus during the 2010-2020 time period (INN-003, INN-004, INN-005 Phase 1 and 2, and INN-007).
- Complaints reported to InnFocus between July 1, 2017 to December 31, 2023.

4 Risks and Warnings

4.1 Residual Risks and Undesirable Effects

Each potential risk and undesirable effect associated with the MicroShunt is listed below in Table 1. The “time frame” represents the time period in which the potential harm could occur, along with the time frame represented for this review period. The “expected frequency/quantification” is a statistical estimation of how often the potential harm may occur, based on clinical data from clinical investigations, reported complaints, and events reported in the literature. Lastly, a discussion is provided to explain the nature of the risk/undesirable effect, and to provide insight, where practical, as to whether the risk/undesirable effect is anticipated or can be easily avoided. It also details whether or not this risk/undesirable effect has been seen by InnFocus in the clinical investigations conducted, the literature reviewed, or incidents reported in complaints.

Table 1 Discussion of Residual Risks and Undesirable Effects

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Glaucoma progression not controlled	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Data reported in four clinical investigations showed IOP reductions from baseline of 20% or more, in 51% to 96% of patients enrolled.	Glaucoma is chronic and often progresses, despite the fact that an implanted drainage device is in place and is functioning as intended. Disease progression with regard to the MicroShunt, is not explicitly measured or reported in the reviewed literature, nor has it been reported in complaints. The MicroShunt restores patient IOP to a range which slows disease progression (Advanced Glaucoma Intervention Study; AGIS) while greatly reducing the need for glaucoma medications and allowing for a generally less arduous and unpredictable early postoperative course vs trabeculectomy. The MicroShunt provided IOP reduction ≥20% in 51% to 96% of patients at varying time points in the four clinical studies conducted by InnFocus. Clinical literature reviewed reported the following: <u>Mean IOP reduction</u> • 40% at 12 months and 39% at 24 months [34]. • Studies reporting ≥20% reduction in mean IOP from baseline at 12 months, or meeting the *complete success* definition which includes ≥20% reduction: - 84.0% of patients [44]

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			- 62.1% of patients [47] - 73.1% of patients (POAG) to 75.0% (PEXG) [49] - 67.74% of patients [51] <u>Mean IOP at 12 months</u> - 13.00 mmHg [38] - 76.9% (IOP ≤17mmHg and >6mmHg without medications) [41].
Increase in cup-to-disc ratio (C/D)	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk (less than 2 in 10,000) based on all data sources.	Increase in cup-to-disc ratio (C/D) is associated with a progression of glaucoma. Increase in cup-to-disc ratio (C/D) has not been explicitly reported within the scientific literature reviewed or reported in complaints. The overall expected frequency is based upon the number of number of events reported in the clinical investigations compared against the total number of units shipped or studied in clinical investigations.
Anesthesia related complications	Occurs during or post procedure (within 30 days). Clinical data available with up to 60 months of follow up.	Rare risk (less than 1 in 10,000) based on all data sources.	Anesthesia related complications are potential adverse events associated with all surgical procedures. The type of anesthesia used during implantation of the MicroShunt is at the discretion of the physician. A total of 3 anesthesia related complications were reported during clinical trials conducted by InnFocus. Anesthesia related complications have not been explicitly reported in the publications reviewed , nor have there been any reported complaints.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Difficulty in inserting the MicroShunt or failure to implant the device	Occurs during procedure (within 30 days). Clinical data available with up to 60 months of follow up.	Remote risk (less than 1 in 1000) based on all data sources. Complaint data shows occurrence is rare (less than 1 in 10,000).	Difficulty in inserting the MicroShunt or failure to implant the device is a potential adverse event which could result in a delayed procedure. With user training insertion is highly successful, and any encountered difficulty is resolved during the procedure. During clinical trials there was initial difficulty inserting the MicroShunt in 28 events, which subsequently resolved. Complaints reported 6 cases with difficulty, which resolved. The reviewed literature revealed no discussion of difficulty inserting the MicroShunt.
Device malfunction	Occurs during or post procedure. Clinical data available with up to 60 months of follow-up.	Remote risk (2 in 1000) based on all data sources.	Device malfunction is a potential adverse event associated with all glaucoma drainage implants. Clinical trials reported 3 device malfunctions. There has been 7 complaints reported using the general term “device malfunctions”. Nevertheless, device related malfunctions are discussed within this table where specific residual risks are explained and quantified.
Device repositioning	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (3 in 10,000) based on all data sources.	Device repositioning is a potential adverse event associated with glaucoma drainage implants. Device repositioning occurred in 10 instances in clinical trials. Within the literature reviewed, there was one case report of repositioning [46].

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There has been 7 complaints reported related to device repositioning.
Extended surgical procedure	Occurs during procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources.	An extended surgical procedure is a potential adverse event associated with any surgical procedure. The implantation of the MicroShunt is a straightforward procedure, supported by training. An extended surgical procedure has not been explicitly reported within the scientific literature reviewed, as part of clinical investigations conducted. 6 complaint has been reported related to extended surgical procedure.
Tube migration out of anterior chamber	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 3 in 10,000) based on all data sources.	Migration of the device is a potential adverse event associated with all implantable glaucoma drainage devices. Migration although rare, can occur at any time and may be related to insertion technique or placement of the device (if the scleral pocket is too wide, or due to non-secured positioning within the scleral pocket.) Tube migration is resolved through repositioning the device, or by MicroShunt replacement. Six events were cited during the multiple clinical trials. Migration complaints are rare, reported in less than 1 in 10,000 cases. Within the literature reviewed, there was a single event reported in a two patient case series [43].

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Flat anterior chamber	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (4 in 10,000) based on all data sources.	Flat anterior chamber is an adverse event associated with all glaucoma drainage devices. A flat anterior chamber is related to an elevated aqueous flow and is an infrequent occurrence. Clinical trials had 9 instances of flat anterior chambers. There has been 19 reported complaints. The literature reviewed identified one study involving implantation of the device in POAG and PEXG patients, with 3 reported flat anterior chambers in each group [49].
Shallow anterior chamber	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (2 in 1,000) based on all data sources.	Shallow anterior chamber is a non-serious adverse event associated with glaucoma drainage devices. There were 30 events reported during clinical trials. Within the clinical literature reviewed, the early post-operative (<3 months) rates of a shallow anterior chamber range from 3.2% to 9.4% representing a total of 18 patients [38,41,51]. The rate reported for late complications (≥3 months) reduces to 1.2% [41], reflecting 1 patient. There have been 22 reported complaints.
Excessive bleeding in anterior chamber or incision site or eye	Occurs during and post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources.	Bleeding is a byproduct of the implantation procedure, and excessive bleeding is a rare potential adverse event associated with all glaucoma drainage devices and their associated implantation procedure.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			Excessive bleeding in the anterior chamber, the incision site, or the eye has not been explicitly reported within the scientific publications reviewed, in the clinical investigations conducted, or in complaints. There has been 1 reported complaint reported for "bleeding" at the wound site.
MicroShunt touches cornea or iris	Occurs during and post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 1 in 1000) based on all data sources. Complaint data reflects a far lower occurrence at 1/10,000.	The MicroShunt touching the cornea or iris are potential adverse events associated with the implantation procedure. 23 incidents were recorded during clinical trials. There are two reported complaints of the device touching the iris. Within the clinical literature reviewed, one case report was identified of the device "almost touching the corneal endothelium" [39]. There have been 3 reported complaints associated with the MicroShunt touching the iris.
Intraocular pressure too high	Post procedure. Clinical data available with up to 60 months of follow-up.	Monitoring intraocular pressure (IOP) is required post operatively for all glaucoma drainage devices, in order to provide prompt and effective therapy. IOP	High intraocular pressure is a significant challenge for ophthalmic surgeons implanting glaucoma drainage devices. Primary open angle glaucoma (POAG) is chronic and often progresses despite the fact that a drainage device has been implanted and is functioning as intended.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
		was monitored at the outset and during clinical trials. Clinical investigation data shows that increased IOP requiring some level of treatment is a common occurrence and was reported in half of the patient cases as part of post-operative monitoring.	Elevated IOP can be treated through interventions such as needling, medication, or reoperation. There are no literature citations for "IOP too high". No Complaints were reported for "IOP too high". High IOP can find its source in disease progression, or in environmental factors such as the presence of biological materials which inhibit flow. *See other sections in Table 1 for specific residual risks related to obstruction or low/no flow events, as there is an implicit relationship between these events and elevating IOP.*
Strabismus	Occurs post procedure. Clinical data available with up to 60 months of follow-up	Rare occurrence (less than 1 in 10,000) based on all data sources.	Strabismus, also known as hypertropia (crossed eyes) is an uncommon adverse event associated with glaucoma drainage devices. Strabismus has not been explicitly reported within the scientific literature reviewed, clinical investigations conducted, or in complaints.
Choroidal effusion or hemorrhage	Occurs post procedure. Clinical data available with up to 60 months of follow-up	Remote occurrence (less than 3 in 1000) based on all data sources. Complaint rate data shows occurrence of less than 4 in 10,000.	Choroidal effusion, detachment or hemorrhage events are potential adverse events associated with glaucoma drainage implants, and may include minor instances that self-resolve, or are treatable. Data collected during clinical trials identified 25 events, of which 24 were effusion/detachment and 1 was hemorrhage. Scientific literature reviewed revealed the following: • Effusion/detachment: 48 instances cited [34, 38, 41, 44, 45, 47, 49, 52]. • Hemorrhage: 2 instances cited [40, 44].

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There has been 54 complaints received, 49 for effusion or detachment; 5 for hemorrhage.
Retinal complications (retinal detachment, proliferative retinopathy, macular fold)	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (2 in 10,000) based on all data sources.	Retinal complications are a potential adverse event associated with glaucoma drainage devices. Reviewed literature identified one event for retinal tear [38]. Clinical occurrences (6), and complaint data (2) reveal a low rate of occurrence of less than 2 in 10,000. There has been 1 complaint reported for retinal complications.
Hyphema (microhyphema)	Post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 4 in 1000) based on all data sources.	Both hyphema (collection of blood in the anterior chamber of the eye) and microhyphema (red blood cells in the anterior chamber that don't form a clot) are potential side effects of glaucoma drainage device implant surgery, which may or may not require treatment. There were 118 recorded events during clinical trials. In the literature reviewed, hyphema and microhyphema may be grouped together. Rates of occurrence, and bibliography references are as follows. (Micro)Hyphema: - Early: 3.2% to 20%* [34,38,41,49,51] - Late: 0% to 7.7% [41,44,47] * Small sample sizes of 20 eyes [49] and 41 eyes [34]. Complaint data consists of 49 reports.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Hypotony or hypotony maculopathy	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 6 in 1000) based on all data sources.	Hypotony/hypotony maculopathy events (transient or persistent) are potential adverse events associated with all glaucoma drainage devices. Hypotony maculopathy is characterized by low IOP, with fundus abnormalities. In clinical studies, hypotony complications occurred in 166 instances, representing less than 7% of cases. The scientific literature reviewed includes hypotony, transient hypotony, hypotony requiring the reformation of the anterior chamber, and hypotony maculopathy. In nearly all reviewed publications, data was reported as "early" (<3 months) and as "late" (≥3 months): <u>Early:</u> • Hypotony: 7.7% to 69% [34, 45, 49, 50, 51, 52] • Hypotony requiring reformation of anterior chamber: 2% to 15% [34, 50] • Hypotony maculopathy: 0.0 % to 3.5% [38, 41, 51] <u>Late:</u> • Hypotony: 0% [34] • Hypotony requiring reformation of anterior chamber: 2% to 15% [34,50] • Hypotony Maculopathy: 0.6% to 2.4% [38, 41] <u>No defined timepoint</u>: • 1.7% [47] • 0% [53] It is important to note: ▪ The three studies which reported the highest rates of hypotony related data and complications of

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			39% [34], *40%* [49] and *69%* [50] were comprised of small sample sizes of 41, 20 and 26 eyes, respectively. ▪ The 40% rate [49] reflected off label use. ▪ These higher rates include "transient" hypotony cases: o Hypotony: 18/69% [50] o Hypotony requiring AC reformation: 4 /15% [50] o Transient hypotony cases noted to resolve spontaneously (6/19.3%) [51], and 12 events/24%) [52] lasting for a one week duration. There has been 43 complaints reported for all forms of hypotony.
Phthisis bulbi	Occurs post-procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources.	Phthisis bulbi (end stage eye) is characterized by severe eye damage. Phthisis bulbi has not been explicitly reported within the scientific literature reviewed, the clinical investigations conducted or reported in complaints.
Iris incarceration	Occurs during procedure	Rare occurrence (less than 1 in 10,000) based on all data sources.	Iris incarceration is a potential adverse event associated with surgical procedures that implant devices in the anterior chamber. There has been 1 complaint reported relating a case of Iris incarceration.
Iridodialysis	Occurs during procedure	Rare occurrence (less than 1 in 10,000) based on all data sources.	Iridodialysis is a potential adverse event associated with surgical procedures that penetrate the anterior chamber (e.g., cataract surgery, filtering surgery).

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There has been 2 complaints reported relating a case of Iridodialysis.
Endophthalmitis	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 2 in 10,000) based on all data sources.	Endophthalmitis is an infection of the tissues or fluids in the eye which requires immediate treatment. This a potential adverse event associated with all glaucoma drainage devices. There were no cases of endophthalmitis reported in the clinical investigations completed, and no cases of endophthalmitis directly attributed to the device in the literature reviewed, however there was 1 single-patient case report which recorded a case of endophthalmitis following bleb needling [37]. Complaint reporting identified 5 reports.
Tube erosion through conjunctiva	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 5 in 10,000) based on all data inputs.	Erosion of the device through the conjunctiva is a known inherent risk associated with all glaucoma drainage devices. Erosion of the MicroShunt through the conjunctiva, if it occurs, is typically an implantation procedure related event. The erosion is attributable to one of two basic issues: • The scleral pocket is not wide enough, or • MicroShunt fins are not seated properly in the scleral pocket, where the patient has a thin conjunctiva.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There were two instances of tube erosion through the conjunctiva reported during clinical trials. The clinical literature reviewed reported four cases of erosion [38, 42, 47, 48]. In addition, one study discussed erosion of aqueous implants, citing an occurrence rate of 1% to 5% of cases [12]. Complaints reported: 49 Combining clinical trial data with literature cited, and reported complaints results in an overall occurrence rate of less than 5 events in 10,000, which is well within the state of the art.
Tube obstruction, partial or complete (block by iris or vitreous or fibrin or debris)	Occurs during and post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 3 in 1000) based on all data sources.	Tube obstruction, partial or complete (blocked by iris, vitreous, fibrin or debris), is a potential adverse event associated with all glaucoma drainage devices. Obstruction can slow or stop aqueous flow leading to "low flow" or "no flow" complaints, which can be a contributing cause to an elevated IOP. Obstruction typically requires some level of intervention. *Note: the literature identified a systematic review of data citing 3476 eyes, from RCT's, related to MIGS devices (minimally invasive glaucoma surgery devices), with a stent obstruction rate of 14.5%* [18]. The MicroShunt clinical experience is significantly lower, at a rate less than 3 in 1000. Clinical trial data identified 10 instances of obstruction. The reviewed literature identified 2 instances of obstruction with the MicroShunt [47].

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There are 23 complaints where users reported obstruction (partial or transient), and 194 complaints reporting “low flow” or “no flow”, implying a potential obstruction.
Uveitis	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources	Uveitis, or an inflammation of the uvea is a potential adverse event associated with glaucoma drainage devices. There were no cases of uveitis reported in the clinical investigations completed. Uveitis has not been explicitly reported in the publications reviewed. There has been 1 complaint reported.
Iritis	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 3 in 10,000) based on all data sources.	Iritis is a swelling and irritation (inflammation) of the iris. Clinical data revealed one study with 5 events, a rate of 1.3%, as compared to Trabeculectomy which occurred at a rate of 3.1%. Within the clinical literature reviewed, one publication showed an incidence of iritis as a late complication (≥ 3 months), at a rate of 1.8%; 3 of the 164 eyes presented with iritis [41]. There have been no reported complaints of iritis.
Diplopia	Can occur at any time, with or without surgery.	Remote occurrence (1 in 1000) based on all data sources.	Diplopia (double vision) is a potential adverse event which can be associated with all glaucoma drainage devices and can occur both prior to and following surgery. It is typically a temporary event.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			Diplopia was monitored for occurrence during clinical trials, with 35 incidents recorded, an incidence rate of 1.4%. The reviewed literature cites 4 incidences of occurrence in a 164-patient study [41]. There have been 1 complaint reported.
Aqueous misdirection or Malignant glaucoma.	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 2 in 10,000) based on all data sources.	Aqueous misdirection, also referred to as malignant glaucoma, is rare but is one of the most serious complications of glaucoma filtration surgery. It is diagnosed when there is shallowing of the central (axial) anterior chamber in association with increased intraocular pressure (IOP) and normal posterior segment anatomy. There were two instances of aqueous misdirection/malignant glaucoma reported in clinical trial data. The reviewed scientific literature revealed one case report [39]. Complaint data consists of 2 reported events.
Corneal complications (abrasion, edema, ulceration, infection, decompensation, bullous keratopathy, endothelial cell loss, Descemet striae, keratitis, Keratic precipitates)	Occur post procedure. Clinical data available with up to 60 months of follow-up.	Corneal complications occur at a remote rate of 4 in 1000 based on all data sources.	Corneal complications are a grouping of nine potential adverse events associated with all glaucoma drainage devices. The severity of these events can range from abrasion to endothelial cell loss, and frequency of occurrence varies. In clinical trials, the incidences of occurrence were: • Keratitis: all forms (60) • Edema (50)

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			• Abrasion (23) • Endothelial cell loss/ECL (7) • Descemet striae (5) • Ulceration (1) • Infection (0), and decompensation (0) Within the reviewed literature, the following was identified: • For ECL, the MicroShunt performs similarly to other long tube shunts, showing initial cell loss immediately post op, continuing at reduced rates over time [46]. • One study tracked corneal complications from 46 study eyes, citing 4 “corneal complications” plus two for corneal erosion and two for corneal edema [49]. • 4 cases of corneal edema (2 new onset, one early, one late [38]. Two reports of late corneal edema [41]). • There is one article discussing ECL in a 2 patient case series [43]. Complaint data contains 6 reports, with 3 for ECL, 2 for corneal decompensation, and 1 case of keratic precipitates.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Partial or complete vision loss	Occurs post procedure. Clinical data available with up to 60 months of follow up.	Remote occurrence (2 in 1000) based on all data sources.	The potential for vision to be temporarily or permanently negatively impacted is a known inherent risk associated with all glaucoma drainage devices. Vision deterioration or cataract formation and worsening of cataract after surgery and loss can be attributed to disease progression, as measured via BCVA (best corrected vision acuity). A reduction in IOP slows disease progression and delays further vision loss. Clinical data reported 61 instances of vision loss as measured by BCVA. This compared with a two-fold higher vision loss result in the trabeculectomy group at all time points beginning with month 6 (INN-005 Phase II Study). Literature reviewed revealed one case report for a patient who was found to have experienced vision loss [40]. The complaint data for reduced visual acuity/vision loss/visual impairment show 15 reported events.
Blurry vision	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 2 in 1000) based on all data sources.	Blurry vision is a potential adverse event associated with glaucoma drainage devices. Also termed as “reduced visual acuity”, blurry vision can occur immediately post op, or occur over time. Causes can be non-device related. Clinical trials monitored for blurry vision, reporting 58 incidents. There were two case reports within the literature reviewed citing decreased visual acuity [37,39].

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			Complaints data consists of 16 reports for reduced visual acuity/vision loss/vision impairment. There have been 3 complaints for “blurry vision” specifically that have been received.
Bleb related complications (includes bleb leak, cystic or encapsulated bleb, blebitis, and bleb failure, fibrosis)	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote (less than 5 in 1000) based on all data sources.	Bleb related events are common events associated with all glaucoma drainage devices. Bleb related events were reported in clinical trials for the following: • “bleb leak” (46 events) and • “cystic or encapsulated bleb” (36 events) • “bleb failure” (45 events) Literature reviewed revealed 24 events reported: • Bleb leaks 5 reported: - [47] (3 events), - [49] (2 events) • Bleb encapsulation: 6 reported: - 4 [38] - 1 [50] - 1 case report [37] There have been 19 bleb related events reported in complaints.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Pupillary block	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Pupillary block is not reported as a device related event. The presence of pupillary block is an indication for ophthalmic intervention.	Pupillary block is the most common mechanism leading to acute angle-closure glaucoma, and it occurs when the flow of aqueous humor from the posterior chamber to the anterior chamber is obstructed by a functional block between the pupillary portion of the iris and the lens Pupillary block has not been explicitly reported within the scientific literature reviewed, in the clinical investigations conducted, or in reported complaints.
Ptosis	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 2 in 1000) based on all data sources.	Ptosis (drooping of the upper eyelid) is a potential adverse event which can be associated with glaucoma drainage devices, though there are other causes. Clinical trial data cited 48 instances of ptosis. Literature reviewed revealed the following: • one case of ptosis [34] • two events [41] • two events, one early and one late [38]. There has been 1 related event reported in complaints.
Macular Edema	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (4 in 10,000) based on all data sources.	Macular edema is a buildup of fluid and swelling in the macula. This can distort vision, making things look blurry and causing colors to look washed out. The most common cause of macula edema is diabetic retinopathy, among other causes. It can also develop as a complication after any type of surgery within the eye, including surgery for cataracts, glaucoma, or retinal disease.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There was a low incidence reported during clinical trials (12 incidents in total). The literature reviewed revealed a low incidence of occurrence, discussing a total of 5 events [38,41,44]. There have been no complaints for macular edema reported.
Prolonged inflammation	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 3 in 10,000) based on all data sources.	Prolonged inflammation is inflammation with a duration and dosage in excess of the-standard post operative instructions. Clinical trials reported 6 instances of prolonged inflammation. Prolonged inflammation was not explicitly reported in the literature reviewed. There has been 1 related event reported in complaints.
Use of glaucoma medications	Occurs pre and post procedure. Clinical data available with up to 60 months of follow-up.	Data reported in four clinical investigations showed IOP reductions from baseline of 20% or more, in 51% to 96% of patients enrolled. This reduction in IOP provides an opportunity to reduce or eliminate glaucoma medication.	The MicroShunt is intended for glaucoma patients who are on maximum tolerated medication, and who have uncontrolled IOP. Following a successful implantation, the use of glaucoma medication may be reduced or eliminated. Clinical investigation data, and the literature reviewed, shows that the MicroShunt restored patients' IOP to a normal physiological range which resulted in eliminating or reducing the need for glaucoma medications. (See Tables 3 and 4 of this document)

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			There has been 3 related event reported in complaints involving the use of medications (Diamox, Xalatan, and Cosopt).
Ocular pain	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote (less than 2 in 1000) based on all data sources.	Ocular pain is a potential adverse event associated with the invasive nature of the implantation procedure. There were 39 incidents of ocular pain reported in the clinical trials. Reviewed literature cites one case report of "severe" pain [40]. There have been 4 complaints received related to ocular pain.
Conjunctival complications (buttonhole dehiscence, dissection, hemorrhage, hyperemia, scar, tear, ulceration, filtration cell granuloma)	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 2 in 1000) based on all data inputs.	Conjunctival complications are a grouping of eight potential adverse events of glaucoma surgery. Conjunctival complications were monitored during clinical trials and documented as occurring in 44 instances. Hyperemia was the most prevalent adverse event (27). In addition, the following were documented: • Hemorrhage (7) • Dehiscence (6) • Dissection, scarring, tear, buttonhole (1 each) • Ulceration (0) Complaint data contains 16 reports: 9 reports for scarring, 3, reports for hyperemia, 1 report of conjunctival incision, 1 report of conjunctival

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			retraction, 1 report for hemorrhage, and 1 report for filtration cell granuloma. The literature reviewed contained one case discussion [37], involving recurring subconjunctival scarring and one case report which included conjunctival extrusion [48].
Iris adhesions, synechiae or iris abrasions	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 1 in 1000) based on all data sources.	Iris adhesions, synechiae, or iris abrasions are potential adverse events associated with the implantation procedure. During clinical trials, iris adhesions, synechiae, or iris abrasions were observed in 17 instances. The reviewed literature revealed one study which reported 5 cases of peripheral anterior synechiae related to transient hypotony [46]. Iris adhesions, synechiae or abrasions have not been explicitly reported in complaints.
Cataract development or progression	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence with 3 in 1000 patients being documented as having cataracts when observed during studies or cited within the reviewed literature).	Cataract development or progression are events independent of the device implant. During studies, cataracts were observed in 103 patients. In the literature reviewed, one retrospective, open-label, multicenter study reported that 8 patients exhibited cataract progression [44]. There have been no customer complaints citing cataract development or progression, nor any implied relationship to the MicroShunt implant.
Posterior capsule opacity	Post-procedure; clinical data available with up to 60months of follow-up	Rare occurrence (observed in less than 4 in 10,000) based on all data sources.	Posterior capsule opacity is the formation of scar tissue behind a lens implant. It is not associated with the MicroShunt or the implantation procedure.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			The presence of posterior capsule opacity was documented during clinical trials, being observed in 12 instances. Posterior capsule opacity has not been explicitly reported within the scientific literature reviewed and has not been reported in complaints.
Explantation of the MicroShunt	Post-procedure; clinical data available with up to 60 months of follow-up	Remote occurrence (less than 3 in 1000) based on all data sources.	Explantation of the MicroShunt, or any device, is a known potential adverse event associated with all glaucoma drainage devices. A glaucoma drainage device may be explanted for various reasons including an IOP that is too high, or if the device is obstructed by biological debris. During clinical investigations, a total of 39 incidences involving explant of the MicroShunt were reported. The literature reviewed identified three case reports of the MicroShunt being explanted [40, 42 and 43]. There have been 195 complaints reported involving explantation of the MicroShunt.
Foreign body sensation	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (1 in 1000) based on all data sources.	Foreign body sensation, the feeling of something in the eye, is a potential adverse event associated with the implantation of all glaucoma drainage devices. Data recorded in clinical trials indicated an incidence of occurrence of 36 events. There were no reports within the literature reviewed. There have been no reported customer complaints for foreign body sensation.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Fibrin in anterior chamber	Can occur during and post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources.	Fibrin formation during and post-surgery is a potential adverse event associated with all glaucoma surgery. The MicroShunt does not cause the formation of fibrin but can be affected by its presence. There has been only one observance of a fibrin strand reported during clinical trials. Fibrin in the anterior chamber has not been explicitly reported within the scientific literature reviewed, nor in complaints. There has been 1 related event reported in complaints.
Visual field damage	Occurs pre or post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence in patients (less than 3 in 1000) based on all data sources.	Visual field damage can occur as a result of a broad number of factors, including disease, medication, heredity and inflammation. It is not directly associated with MicroShunt implantation surgery as a cause. Visual field acuity was monitored in clinical trials as a means of assessing damage to the visual pathway as well as for evolving or worsening of conditions. Clinical trial monitoring identified 92 instances of visual field defects/worsening of visual field. There were no reports within the literature reviewed. There have been no reported customer complaints.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
Unplanned glaucoma-related surgical re-intervention	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Remote occurrence (less than 1 in 1000) based on all data sources.	An unplanned glaucoma-related surgical intervention post implantation is a potential adverse event associated with all glaucoma drainage devices. MicroShunt clinical trial data reported 29 instances of events requiring unplanned *glaucoma related* surgical intervention. Unplanned glaucoma related surgical intervention events for the MicroShunt have not been explicitly reported within the scientific literature reviewed, or reported in complaints.
Optic disc hemorrhage	Occurs pre or post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (observed in less than 4 of 10,000) based on all data sources.	Optic disc hemorrhage is a common clinical occurrence of glaucoma, indicating an active disease with likely progression and visual field loss. Optic disc hemorrhage was monitored in clinical trials, presenting in 14 instances. It has not been reported in the literature reviewed, nor in complaints.
Globe perforation	During implantation or anesthesia. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000) based on all data sources.	A globe perforation (rupture) during implantation or anesthesia is a potential adverse event associated with glaucoma implant devices. Globe perforation occurred on 1 occasion during clinical trials, during anesthesia. This event was reported to have resolved on its own. It has not been explicitly reported within the scientific literature, and has not been reported in complaints.
Headache	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (3 in 10,000) based on all data sources.	Headaches were monitored for occurrence during the clinical trials for the MicroShunt.

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			Persistent or chronic headaches are not common to MicroShunt implantation. Clinical trials data reported 11 cases of headaches. The reviewed literature contained no reports of headaches. There has been 1 related event reported in complaints.
Vitreous hemorrhage	Post-procedure; clinical data available with up to 60 months of follow-up	Rare occurrence (less than 2 in 10,000) based on all data sources.	Vitreous hemorrhage is bleeding into the vitreous gel at the back part of the eye and has not been attributed to implantation of a MicroShunt. Frequently, if vitreous hemorrhaging occurs, it self-resolves. The presence of vitreous hemorrhage was monitored during clinical trials and was observed in 3 cases. In literature reviewed, one case was reported in two studies [38, 41] and single case report identified a vitreous hemorrhage associated with diabetic retinopathy [48]. There has been 1 related event reported in complaints.
Wound leak	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (5 in 10,000) based on all data sources.	Wound leaks have also been discussed under other categorizations such as conjunctival complications and bleb leaks. A wound leak is viewed as a short-term event related to suturing at the wound site. This indicates a procedure related event. In clinical trials,13 instances were recorded. The reviewed literature revealed a total of 5 instances of wound leaks:

Residual Risks and Undesirable Effects	Time frame	Expected frequency/ quantification	Discussion
			• 3 events; representing 5.2% of patients in a study [47]. • 2 events, rates of 0.6% and 1.2% [38,41]. There have been 3 complaints reported.
Suture related complications	Occurs post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 3 in 10,000) based on all data sources.	Suture related complications are a potential adverse event associated with any surgical procedure where sutures are used. In clinical trials, suture related events were reported as “suture removal”, “exposed suture”, “suture allergies”, “suture bleeding”, and “suture abscess.” A total of 10 events were reported. Suture related complications have not been explicitly reported within the scientific literature reviewed, or in reported complaints. There has been 2 complaints reported.

4.2 Warnings and Precautions

Please see Table 2 below, which outlines the warnings and precautions associated with the MicroShunt. These warnings and precautions are taken from the Instructions for Use (IFU) and have been created based upon the Company's risk management system.

Each warning/precaution is listed below in Table 2, along with the potential associated harms that could result. The "time frame" represents the time period in which the potential harm could occur, along with the time frame represented for this review period. The "expected frequency" is a statistical estimation of how often the potential harm may occur, based on clinical data from clinical investigations, reported complaints, and events reported in the literature. Lastly, a discussion is provided to explain the nature of the warning or precaution, and to provide insight as to whether the risk is anticipated or easily avoided. It also details whether or not this risk has been seen by InnFocus in the clinical investigations conducted, the literature reviewed, or incidents reported in complaints.

Table 2 Warnings and Precautions

Warning/ Precaution	Associated Potential Harm	Time frame	Expected frequency/ quantification of individual harm	Discussion
Warnings				
Rx only: This device is restricted to sale by, or on the order of, a physician.	Potential adverse events up to and including irreversible ocular damage or vision loss.	During or post procedure. Clinical data available with up to 60 months of follow-up	Rare occurrence (less than 1 in 10,000).	The PRESERFLO MicroShunt is a prescription only device. This risk is avoidable since the device is sold directly to ophthalmologists/ophthalmic surgeons specializing in the treatment of glaucoma (including surgeons specializing in anterior segment and cataract surgery), who have been trained in ophthalmic surgery. During the clinical investigations there were no documented complications related to this warning. Within the clinical literature reviewed, no specific complications have been documented related to this warning. Within this review period there have been no complaints received related to this warning.
For one-time use only. Do not reuse or re-sterilize.	Resterilization and/or reuse of the device could result in serious cross contamination, the transmission of an infectious disease, or damage to the structural integrity of the device.	During or post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000).	The PRESERFLO MicroShunt is sterilized for single use and is labelled accordingly. If the sterile barrier packaging is breached, users are instructed not to re-sterilize this device. Attempting to re-sterilize the device could result in contamination or could damage the structural integrity of the device. During the clinical investigations there were no documented complications related to this warning.

				Within the clinical literature reviewed, no specific complications have been documented related to this warning. Within this review period there have been 2 complaints received related to this warning.
After use, dispose of product and packaging in accordance with hospital, administrative, and/or local government policy.	Potential injury to user or others, caused by contact with contaminated components, or with the sharp edge of the Scleral Marker.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000).	Failure to properly dispose of product and packaging may result in an injury to the user or to anyone coming in contact with the materials. The risk can be avoided by following the pertinent policies of the hospital, and/or local government. During the clinical investigations there were no documented complications related to this warning. Within the clinical literature reviewed, no specific complications have been documented related to this warning. Within this review period there have been no complaints received related to this warning.
Long term effects of Mitomycin C (MMC) with the use of this device have not been evaluated. Necessary precautions and interventions on the use of MMC are highly recommended	Potential adverse effects to the conjunctival wound edge.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000).	If MMC is to be used, necessary precautions should be exercised. During the clinical investigations there was one documented event related to this warning, citing allergic keratitis due to MMC sensitivity. Within the clinical literature reviewed, no specific complications have been documented related to this warning. Within this review period there has been 1 complaint received related to this warning.
The MicroShunt should not be subjected to direct contact with petrolatum-based (i.e.,	Device performance and structural integrity can be affected.	During or post procedure.	Rare occurrence (less than 1 in 10,000).	The use of petrolatum-based materials in direct contact with the device may affect device performance or cause structural integrity issues with the device.

petroleum jelly) materials (e.g., ointments, dispersions, etc.).		Clinical data available with up to 60 months of follow-up.		During the clinical investigations there were no documented complications related to this warning. Within the clinical literature no specific complications have been documented related to this warning. Within this review period there has been 1 complaint received related to this warning.
The effects of cutting or modifying the MicroShunt have not been evaluated.	Device performance and structural integrity can be affected.	During or post procedure. Clinical data available with up to 60 months of follow-up	Rare occurrence (less than 1 in 10,000).	This warning is provided to ensure that a user does not cut or modify the MicroShunt since the effects on the structural integrity of the device are unknown, and performance can be adversely impacted. In a pilot study, conducted prior to CE Marking of the MicroShunt, the MicroShunt length was altered in order to support the final device dimensions. However there has been no clinical investigation which has established the effects of varying lengths or configurations of the MicroShunt. In the literature reviewed, there has been a single case in a two-patient case report [42] where the device was shortened following repeated instances of conjunctival erosion of the device. Within this review period there have been 4 complaints received related to this warning.
Viscoelastics have not been tested with this device. However, in an emergency when all other therapies have failed, the use of hydroxypropyl methylcellulose	Effects device performance and functionality.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare occurrence (less than 1 in 10,000).	This warning is provided because use of viscoelastics has not been clinically tested with the device. In an emergency, HPMC may be used as a last resort to correct a flat chamber. The risk of increased IOP related to the emergency use of HPMC may be mitigated through close and more frequent monitoring of IOP.

(HPMC) may be an option. Use of HPMC should be a last resort to correct a flat chamber with the MicroShunt and may risk loss of flow through the device for one or more weeks after use necessitating close or more frequent observation of IOP.				During the clinical investigations there was one documented event related to this warning, where a viscoelastic was used to limit flow in a MicroShunt patient with hypotony requiring intervention. Within the clinical literature reviewed, no specific complications have been documented related to this warning. Within this review period there have been 4 complaints received related to this warning.
Precautions				
The safety and effectiveness of the MicroShunt has not been established in patients with chronic eye inflammation	Short and long-term complications up to and including permanent visual loss.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	Use of the device in patients with chronic eye inflammation may introduce short or long-term complications. This risk is avoidable with proper patient screening. During the clinical investigations there were no documented complications related to this precaution. Within the clinical literature reviewed, no specific complications have been documented related to this precaution. Within this review period there have been no complaints received related to this precaution.
The safety and effectiveness of the MicroShunt has not been established in patients with congenital and infantile glaucoma	The MicroShunt is indicated for an adult population. A wide range of device and patient complications may occur.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	The intended target population of the MicroShunt is for adults. Use of the device in a patient with congenital and infantile glaucoma may result in serious complications, including bleb related complications, increased IOP or hypotony. This risk is avoidable with proper patient screening.

				During the clinical investigations there were no documented complications related to this precaution. Within the clinical literature reviewed, no specific complications have been documented related to this precaution. Within this review period there have been one complaint received related to this precaution.
The safety and effectiveness of the MicroShunt has not been established in patients with neovascular glaucoma, uveitic glaucoma, pseudoexfoliative or pigmentary glaucoma or other secondary open angle glaucomas.	The safety and effectiveness of the device in a patient with neovascular, uveitic, pseudoexfoliative or pigmentary glaucoma or other secondary open angle glaucomas is unknown. Use of the MicroShunt in patients with these conditions may result in bleb related complications or increased IOP.	Post procedure. Clinical data available with up to 60 months of follow up	Rare risk of occurrence based on clinical and complaint data (less than 1 in 10,000).	The exclusion criteria for individual clinical studies included pseudoexfoliative glaucoma (one study), and secondary glaucoma such as post-trauma, pseudoexfoliation or pigment dispersion (two later studies). During the clinical investigations there were no documented complications related to this precaution. Within the clinical literature reviewed, the following bibliography references have been identified related to this precaution [35,38,41,44,46,49 and 53]. See Table 4 within this document for a discussion of outcomes. Within this review period there have been 25 cases complaints received related to this precaution (17 cases for exfoliation glaucoma, 2 for neovascular glaucoma, 2 cases for uveitic glaucoma, 2 cases for traumatic glaucoma, 1 case for pigment glaucoma and 1 case for cataract glaucoma)
The safety and effectiveness of the MicroShunt has not been established in patients that have	Compromises device performance. Can affect IOP and cause potential bleb complications.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	Use of the device is a patient who had undergone previous incisional glaucoma surgery or cilioblative procedures may result in bleb related complications, or increased IOP. This risk is avoidable with proper patient screening.

undergone previous incisional glaucoma surgery or cilioablative procedures				During the clinical investigations there were no documented complications related to this precaution. Within the clinical literature reviewed, no specific complications have been documented related to this precaution. Within this review period there have been 3 complaints received related to this precaution.
The safety and effectiveness of the MicroShunt has not been established with concomitant cataract surgery with IOL implantation	Use of the device in patients with concomitant cataract surgery may result in bleb related complications or increased IOP	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	During the clinical investigations for the MicroShunt there was one early pre-CE Mark trial which included patients with concomitant cataract surgery with IOL implantation. However, safety and efficacy have not been established through this trial, with this patient population. There were no documented complications in any of the other MicroShunt investigations related to this precaution. Within the clinical literature reviewed, the following bibliography references have been identified related to this precaution [34,46,47]. See Table 4 within this document for a discussion of outcomes. Within this review period there have been 3 complaints received related to this precaution.
Avoid use of toothed forceps to handle device. McPherson type forceps are recommended.	Potential damage to MicroShunt. Compromises device performance; affects IOP.	During and post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	The use of toothed forceps may damage the MicroShunt which could result in a damaged MicroShunt. Damage will be self-evident when confirming the flow. The risk may be avoided by the use of nontoothed forceps (McPherson type).

				During the clinical investigations there were no documented complications related to this precaution. Within the clinical literature reviewed, no specific complications have been documented related to this precaution. Within this review period there has been 1 complaint received related to this precaution.
The patient's IOP should be monitored postoperatively. If IOP is not adequately maintained after surgery, appropriate additional therapy to maintain IOP should be considered.	Failure to monitor IOP post operatively puts the patient at unnecessary risk of hypotony or increased IOP.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	Failure to monitor a glaucoma patient's IOP post-operatively may result in hypotony or an increased IOP. This risk can be mitigated by complying with universal guidelines. IOP was monitored as part of clinical investigations with the MicroShunt. Within the clinical literature reviewed, there was one instance [48] where a patient missed scheduled follow-ups due to the Covid pandemic. Complications developed during the "missed monitoring" timeframe thus treatment was delayed until the issues were found at a later date. Within this review period there was one reported complaint related to this precaution.
The safety and effectiveness of the use of more than a single PRESERFLO™ MicroShunt has not been established.	The safety and efficacy of implantation of more than one MicroShunt has not been established due to the risk of hypotony.	Post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	Implantation of more than one MicroShunt may result in hypotony. This risk is avoidable by only implanting one device. During the clinical investigations there were no documented complications related to this precaution. In the literature reviewed there was one instance [48] where a MicroShunt was left in situ to avoid other complications which could occur at removal

				during revision. However, the authors recommend removal of the initial device when performing revision surgery. Within this review period there was one complaint recorded, related to this precaution.
If the MicroShunt appears deformed, folded and/or distorted, do not use.	A damaged MicroShunt may not preform or function properly, resulting in a broad range of complications.	During and post procedure. Clinical data available with up to 60 months of follow-up.	Rare risk of occurrence (less than 1 in 10,000).	A deformed, folded, and/or distorted MicroShunt should not be implanted. This risk is avoidable, given that it is standard practice to inspect an implantable device before use. A deformed /distorted device is typically self-evident. The MicroShunt Instructions for Use, along with those of competitive devices includes this precaution or warning. During the clinical investigations there were no documented complications related to this precaution. Within this review period there have been 3 complaints received related to this precaution.
The creation of 2 or more scleral tunnels in an attempt to implant the MicroShunt may cause leakage of aqueous humor and increase the risk of hypotony, if the additional scleral tunnels did not self-seal or sutured.	The creation of more than one scleral tunnel, without self-sealing or suturing can result in aqueous leakage and low hypotony.	During and post procedure. Clinical data available with up to 60 months of follow-up	Rare risk of occurrence (less than 1 in 10,000).	Creation of two or more scleral tracks may result in hypotony if the initial track is not sealed or properly sutured. Within the clinical investigations, there were two instances where a double track tunnel was created, however there was no indication of leakage, thus the initial tunnel was sealed either spontaneously or through suturing. There were no other references to a double scleral tunnel during the clinical investigations. Within the clinical literature reviewed, no specific complications have been documented related to this precaution.

				Within this review period there were 2 complaints received related to this precaution.
Pharmacologic dilation of the pupil may obstruct the proximal tip of the MicroShunt, due to bunching up of the iris, in certain situations such as shallow or flat chamber, or when the proximal tip of the MicroShunt is touching or in closing proximity to the iris.	In a single case report [39], *"the use of IOP lowering agents and atropine 1% led to an unanticipated complication of PMS obstruction to the iris, though the shallow anterior chamber would have been a predisposing factor".*	During and post procedure. Clinical data available with up to 60 months of follow-up. Source relates to a single case report.	Rare risk of occurrence (less than 1 in 10,000).	When managing patients with a shallow or flat anterior chamber, while not a likely occurrence, there is a possibility that pharmacologic dilation of the pupil in these patients may cause the iris to obstruct the MicroShunt. For these patients, more frequent monitoring of IOP following dilation is recommended. During the clinical investigations there were no documented complications, nor were there complaints related to this precaution. The case study report [39] provides the background and commentary related to this precaution.

4.3 Other Relevant Aspects of Safety

The MicroShunt has not been the subject of any field safety corrective actions since it was CE marked in 2012.

5 Summary of Clinical Evaluation and Post Market Clinical Follow-Up (PMCF)

5.1 Summary of Clinical Data Related to Equivalent device, if Applicable

No devices have been claimed as equivalent in the clinical evaluation of the MicroShunt.

5.2 Summary of Clinical Data from Conducted Investigations of the Device Before the CE-marking, if Applicable

InnFocus initiated two clinical investigations (INN-003 and INN-004) prior to the MicroShunt receiving the CE mark in 2012. Both of these clinical investigations were completed after the device was CE marked. See Table 3 below for a summary of these two, and two subsequent MicroShunt clinical investigations conducted by InnFocus.

5.3 Summary of Clinical Data from Other Sources, if Applicable

5.3.1 Summary of Clinical Data

Please see Table 3 for a listing of the four MicroShunt clinical investigations conducted by InnFocus, and Table 4 for a listing of clinical data from reviewed literature.

Table 3 PRESERFLO MicroShunt Clinical Investigations Conducted by InnFocus

Clinical Investigation Name and Source	Study Design	Key Outcomes
INN-003: *Clinical Study of the Safety and Performance of the Miami InnFocus Drainage Implant (MIDI Arrow) to Relieve Glaucoma Symptoms*	Single center, non-randomized, single arm clinical study with a five year follow up (23 patients 23 eyes. Patients 1 to 12 were essentially exploratory followed for only 12 months.)	**SAEs: n (%):** - Posterior capsule opacification: 2 (9%) - Tenon's cyst: 1 (4%) - Pupillary capture: 1 (4%) - Iris adhesions: 1 (4%) - Intraocular pressure increased: 1 (4%) There were no reports of implant migration or tube erosion/exposure. **Success**: IOP <15 mmHg or IOP reduced from baseline by ≥20%, (without glaucoma re-operation) **Complete success**: IOP <15 mmHg or IOP reduced from baseline by ≥20% (without reoperation), with no supplemental medial therapy **Success and Complete Success Rates** **Follow up** / **Success** / **Complete Success** **Day 1** / Not reported / 96% **Day 7-Week 6** / 100% / 100% **Through Month 24** / Above 90% / Above 80% **Month 60** / 78% / 52% **Preoperative Baseline IOP mean**: 23.8 mmHg (n = 23) **Postoperative IOP:** Day 1: 9.6 mmHg (average reduction of 14.2 mmHg) Month 60: 11.5 mmHg (n = 18).

<table>
<tr><th>Clinical Investigation Name and Source</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>Supplemental glaucoma medications
<table>
<tr><th></th><th>Baseline</th><th>Day 7</th><th>Month 12</th><th>Month 60</th></tr>
<tr><td>Mean number per eye</td><td>2.3</td><td>0.0</td><td>0.3</td><td>0.8</td></tr>
</table></td></tr>
<tr><td>INN-004 Clinical Study of the Safety and Performance of the Miami InnFocus Drainage Implant (MIDI Arrow) to Relieve Glaucoma Symptoms</td><td>Single center, non-randomized, single arm clinical study with a two year follow up. Each eligible patient with POAG was implanted with a MicroShunt in the anterior chamber of the eye. (72 eyes in 62 patients were implanted with the device)</td><td>SAEs: n (%)
- Increased IOP: 3(4%)
- Medical device repositioning: 1(1%)
- Bleb leak after cutting a suture: 1(1%)
- Macular oedema:1(1%)
- Macular degeneration: 1(1%)
- Dacryocystitis: 1(1%)
- Visual acuity reduced: 1(1%)
No reports of encapsulated bleb, implant migration or tube erosion.

Success:
• Patients with a baseline IOP >18 and ≤21 mmHg:
IOP reduced from baseline by ≥ 20%, with no reoperation or loss of light perception vision
• Patients with a baseline IOP> 21 mmHg:
IOP <21 mmHg and IOP reduced from baseline by ≥ 20%, with no reoperation or loss of light perception vision
Complete success: achievement of success without supplemental therapy to obtain controlled levels of IOP
<table>
<tr><th>Follow up</th><th>Success
n (%)</th><th>Complete Success
n (%)</th></tr>
<tr><td>Month 6</td><td>50 (69%)</td><td>44 (61%)</td></tr>
<tr><td>Month 12</td><td>50 (69%)</td><td>36 (50%)</td></tr>
<tr><td>Month 24</td><td>51 (71%)</td><td>35 (49%)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Clinical Investigation Name and Source</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>Supplemental glaucoma medications
<table>
<tr><th></th><th>Baseline</th><th>Day 7</th><th>Month 6</th><th>Month 12</th><th>Month 24</th></tr>
<tr><td>Mean number per eye</td><td>2.9</td><td>0.0</td><td>0.1</td><td>0.6</td><td>1.0</td></tr>
</table></td></tr>
<tr><td rowspan="2">INN-005: A Randomized Study Comparing the Safety and Efficacy of the InnFocus MicroShunt™ Glaucoma Drainage System to Standard Trabeculectomy In Subjects With Primary Open Angle Glaucoma</td><td rowspan="2">A two-phase, prospective, randomized, controlled, single-masked, multicenter study with two year follow up which was designed to evaluate the safety and effectiveness of the MicroShunt compared with standard trabeculectomy in patients with Primary Open Angle Glaucoma (POAG) in which IOP is not controlled when using maximum tolerated glaucoma medications. The randomization scheme in Phase I (GLT-101) was 2:1 and in Phase II (GLT-101 and GLT-103) was 3:1.</td><td>Phase 1 (102 patients):
No Unanticipated Adverse Device Effects reported.
Operative SAE: 0
Postoperative SAEs / sight-threatening AEs n (%):
- Malignant Glaucoma: 1 (1.0%)
- Increased OP requiring treatment:1 (1.0%)
- Endothelial scar / loss endothelial cells: 1 (1.0%)

Overall safety profile of the MicroShunt is similar to that of trabeculectomy, but MicroShunt patients experienced lower rates of hypotony, cataract extraction and bleb leak, as well as generally lower rates of the most common adverse events, compared to trabeculectomy.

Reduced IOP from baseline (22.5 mmHg)
- Month 12: 15.4 mmHg
- Month 24: 15.0 mmHg

Medication Free (glaucoma medications)
- Month 12: 66.7%
- Month 24: 58.7%</td></tr>
<tr><td>Phase II (395 patients)
No Unanticipated Adverse Device Effects reported.
Operative SAE: 0
Postoperative SAEs / sight-threatening AEs n (%):</td></tr>
</table>

Clinical Investigation Name and Source	Study Design	Key Outcomes
		- Increased IOP requiring treatment: 7 (1.8%) - Retinal complication: 1 (0.3%) - Aqueous Humor Misdirection (malignant glaucoma): 1 (0.3%) - Choroidal Effusion/detachment: 1 (0.3%) - Hypotony (IOP <6mmHg at any time): 1 (0.3%) - Loss of 2 or more lines of BCVA on 2 consecutive visits 90 days or more after implantation: 1 (0.3%) - Subconjunctival bleeding or hyphema at any time (including microhyphema): 0 - Glaucoma progression with vision loss: 1 (.03%) The overall safety profile of the PRESERFLO® MicroShunt is similar to that of trabeculectomy, but patients who receive the device experience lower rates of catastrophic 6+ line BCVA loss, hypotony, cataract progression / cataract extraction and bleb leak, as well as generally lower rates of the most common adverse events, compared to trabeculectomy. **Reduced IOP from baseline (21.1 mmHg)** - Month 12: 14.2 mmHg - Month 24: 13.9 mmHg **Supplemental glaucoma medications** | | Baseline | Month 12 | Month 18 | Month 24 | | --- | --- | --- | --- | --- | | Mean number per eye | 3.1 | 0.6 | 0.8 | 0.9 | **Medication free (glaucoma medications):** - Month 12: 72.4% - Month 24: 61.1%

Clinical Investigation Name and Source	Study Design	Key Outcomes
INN-007: *Post Market Study to Evaluate Safety and Effectiveness of the InnFocus MicroShunt™ (MIDI Arrow) in Patients with Primary Open Angle Glaucoma*	Multicenter, non-randomized, single arm clinical study with a two year follow up. Each eligible patient with Primary Open-Angle Glaucoma was implanted with a MicroShunt in the anterior chamber of the eye. (101 patients; 101 eyes)	**Ocular SAEs reported: n (%)** - IOP increased: 4 (3.7%) - Sclerectomy: 1 (0.9%) - Trabeculectomy: 1 (0.9%) - Allergic keratitis: 1 (0.9%) - Ulcerative keratitis: 1 (0.9%) - Implant site dehiscence: 2 (0.9%) - Anterior chamber inflammation: 1 (0.9%) - Cataract progression: 1 (0.9%) Implant Migration: 1 (device moved during a needling procedure). No reports of tube erosion/exposure. **Success:** • Patients with a baseline IOP >18 and ≤21 mmHg: IOP reduced from baseline by ≥ 20%, with no reoperation or loss of light perception vision • Patients with a baseline IOP> 21 mmHg: IOP <21 mmHg and IOP reduced from baseline by ≥ 20%, with no reoperation or loss of light perception vision **Complete success**: achievement of success without supplemental therapy to obtain controlled levels of IOP

Follow up	Success n (%)	Complete Success n (%)
Month 6	62 (61%)	54 (53%)
Month 12	58 (57%)	45 (45%)
Month 24	60 (59%)	45 (45%)

<table>
<tr><th>Clinical Investigation Name and Source</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>
Supplemental glaucoma medications
<table>
<tr><th></th><th>Pre-op</th><th>Month 6</th><th>Month 12</th><th>Month 24</th></tr>
<tr><td>Mean number per eye</td><td>2.1</td><td>0.4</td><td>0.6</td><td>0.6</td></tr>
</table>
</td></tr>
</table>

The reviewed clinical literature consisted of a total of 20 articles reporting safety and performance outcomes for the MicroShunt [34-36, 38, 41] [44, 45, 46, 47, 49-53] and six case reports describing the use of the MicroShunt [37, 39, 40, 42, 43, 48]. The key safety and performance outcomes are summarized in the table below.

Note: [36] provides one-year results of the INN-005 Phase 2 clinical investigation reported data, summarized above in Table 3, thus is duplicate data.

Table 4 PRESERFLO MicroShunt Clinical Data from Literature

<table>
<tr><th>Author, citation</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td>Scheres et al. [34]</td><td>A single-center, retrospective comparative case series which compared the 2-year safety and effectiveness of the MicroShunt (41 eyes in 33 patients) and the XEN®45 Gel Stent (41 eyes in 31 patients)</td><td>
<table>
<tr><th>Adverse Event</th><th>XEN Group</th><th>PRESERFLO Group</th></tr>
<tr><td colspan="3">Early Postoperative Complications</td></tr>
<tr><td>Hypotony ≤ 5 mmHg at anytime*</td><td>10 (24%)</td><td>16 (39%)</td></tr>
<tr><td>Hypotony requiring reformation of anterior chamber</td><td>2 (5%)</td><td>1 (2%)</td></tr>
<tr><td>Early (micro)hyphema</td><td>9 (22%)</td><td>8 (20%)</td></tr>
<tr><td>Choroidal detachment</td><td>1 (2%)</td><td>1 (2%)</td></tr>
<tr><td colspan="3">Late Postoperative (> 1 month) Complications</td></tr>
<tr><td>Hypotony</td><td>3 (8%)</td><td>0</td></tr>
<tr><td>Ptosis</td><td>0</td><td>1 (2%)</td></tr>
<tr><td>Curling of stent</td><td>6 (15%)</td><td>0</td></tr>
<tr><td>Tube occlusion</td><td>0</td><td>1 (2%)</td></tr>
<tr><td>Migration of stent</td><td>1 (2%)</td><td>0</td></tr>
</table>
* “A single measurement of hypotony at day 1 and/or week 1 was seen in 10 (24%) of the patients in the Xen group and 16 (39%) of the patients in the MicroShunt group (p = 0.15). By month 1, hypotony had resolved in all cases in the MicroShunt group; however, it persisted in three cases of the Xen group.”
</td></tr>
</table>

Author, citation	Study Design	Key Outcomes

Outcome	XEN Group	PRESERFLO Group
Mean IOP, 12 months	13.3 ± 2.9 mmHg (31% decrease)	12.1 ± 3.5 mmHg (40% decrease)
Mean IOP, 24 months	13.8 ± 3.8 mmHg (28% decrease)	12.1 ± 3.5 mmHg (39% decrease)
Mean Number of Medications, 12 months	0.8 ± 1.2	0.6 ± 1.0
Mean Number of Medications, 24 months	0.9 ± 1.2	0.7 ± 1.1
Surgical Success Rate, 12 months*	Complete success = 46% Qualified success = 78%	Complete success = 58% Qualified success = 79%
Surgical Success Rate, 24months*	Complete success = 34% Qualified success = 73%	Complete success = 49% Qualified success = 79%

Success: (IOP ≤ 18 mmHg at 2 consecutive follow-up visits after 3 months of follow-up) rate at 12 months and 24 months
Complete: (If success was achieved without medication, additional glaucoma surgery or other glaucoma therapy): **Qualified:** (If target IOP was achieved without any additional glaucoma interventions, with or without IOP-lowering medication)

The authors concluded “both the XEN45 Gel Stent and the PRESERFLO Micro-Shunt demonstrated safe and effective lowering of

<table>
<tr><th>Author, citation</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>IOP and the need for IOP lowering medications, with similar success rates after 2 years”.</td></tr>
<tr><td>Aghayeva et al [35]</td><td>A single center retrospective chart review compared MMC–augmented trabeculectomy (187 patients), filtering canaloplasty (25 patients), and MicroShunt implantation (23 patients) impact on short term IOP change in the fellow eye.</td><td>
<table>
<tr><th rowspan="2">Percentage of IOP Change</th><th colspan="2">Trabeculectomy,% of fellow eyes</th><th colspan="2">Canaloplasty, % of fellow eyes</th><th colspan="2">PRESERFLO, % of fellow eyes</th></tr>
<tr><th>1st day</th><th>1 week</th><th>1st day</th><th>1 week</th><th>1st day</th><th>1 week</th></tr>
<tr><td colspan="7">IOP, reduction</td></tr>
<tr><td>≥30%</td><td>13%</td><td>42%</td><td>4%</td><td>12%</td><td>9%</td><td>13%</td></tr>
<tr><td>≥50%</td><td>2%</td><td>4%</td><td>4%</td><td>-</td><td>4%</td><td>4%</td></tr>
<tr><td>IOP, elevation</td><td>33%</td><td>22%</td><td>16%</td><td>32%</td><td>35%</td><td>35%</td></tr>
<tr><td>≥30%</td><td>9%</td><td>8%</td><td>8%</td><td>4%</td><td>13%</td><td>9%</td></tr>
<tr><td>≥50%</td><td>5%</td><td>3%</td><td>8%</td><td>-</td><td>9%</td><td>4%</td></tr>
</table>
The authors concluded that trabeculectomy demonstrated an IOP-lowering effect in “the fellow eye,” and that “significant IOP rise might occur in the fellow eye of some glaucoma patients after different types of glaucoma surgery. “</td></tr>
<tr><td>Baker et al [36]</td><td>A prospective, randomized, multicenter noninferiority study with one-year results. Study specifically compared the MicroShunt (395 patients) and trabeculectomy (132 patients) in patients with POAG.</td><td>Refer to Table 3, the INN-005 Phase 1 clinical investigation.</td></tr>
<tr><td>Durr et al [38]</td><td>A consecutive retrospective cohort of patients with intraocular pressure (IOP) above target and previous subconjunctival filtering surgery, who received the MicroShunt between July 2015 and April 2019 with 1 year follow up.</td><td>
<table>
<tr><th></th><th>Early (< 3 months)</th><th>Late (> 3 months)</th></tr>
<tr><td>Bleb complications</td><td></td><td></td></tr>
<tr><td>Bleb encapsulation</td><td>-</td><td>4(4.7%)</td></tr>
<tr><td>Wound dehiscence</td><td>1 (1.2%)</td><td>-</td></tr>
<tr><td>Exposed Tube</td><td>-</td><td>1 (1.2%)</td></tr>
</table>
</td></tr>
</table>

Author, citation	Study Design	Key Outcomes

Dellen	1 (1.2%)	-
Hyphema	7 (8.2%)	-
Shallow anterior chamber	8 (9.4%)	-
Flat anterior chamber	-	-
Vitreous hemorrhage	1 (1.2%)	-
Macular Oedema	1 (1.2%)	2 (2.4%)
Hypotony maculopathy	3 (3.5%)	2 (2.4%)
Choroidal detachment	11 (12.9%)	-
Ptosis	1 (1.2%)	1 (1.2%)
Serious complications n (%)		
New-onset corneal oedema	0%	1 (1.2%)
Snuff Out	1 (1.2%)	0%
Ciliary body effusion	1 (1.2%)	0%
Retinal tear	1 (1.2%)	0%
Endophthalmitis*	1(1.2%)	0%

*Source- was delayed-onset post trabeculotomy endophthalmitis

Complete Success with failure defined as- any of the following, "1) IOP less than 6 mm Hg and vision loss of more than 2 lines from baseline on two consecutive visits, (2) IOP of more than 17 mm Hg on two consecutive visits, (3) less than 20% reduction from decision IOP on two consecutive visits, (4) glaucoma medication use, (5) surgical revisions or reoperations or (6) no light perception (NLP) vision
Complete Success: no glaucoma medication
Qualified success: with glaucoma medication

IOP 6–17 mm Hg (inclusive) with 20% reduction from decision IOP

- Complete Success: 61.0%

Author, citation	Study Design	Key Outcomes
		• Qualified success:79.7% **Secondary outcomes** **IOP 6–14 mm Hg (inclusive)** • Complete success: 53.8% • Qualified success: 71.3% **IOP 6–21 mm Hg (inclusive)** • Complete success: 61.0% • Qualified success: 82.2% **At one year:** Postoperative mean IOP**:** 13.0 mmHg (censoring for reoperation) Median at 0 medications (IQR 0-2) The authors noted that *"*success rates seen in this study appear to be at or better than reported for tube shunt or trabeculectomy surgery results in these high-risk refractory eyes and concluded that their 1-year results show that the ab externo SIBS microshunt in refractory eyes to previous failed subconjunctival surgery demonstrated reasonable rates of qualified and complete success, decreased drop use, with relatively few complications or further interventions."
Schenker et al [41]	A single center retrospective, interventional case series with a 1 year follow up. Study specifically evaluated the efficacy and safety of MicroShunt in 164 eyes with IOP above target or progressing despite maximally tolerated medical therapy and no previous filtering surgery.	**Complications** **Early (< 3 months)** / **Late (> 3 months)** Wound leak/dehiscence: 1 0.6%) / 0 Hyphema: 9 (5.5%) / 0 Shallow anterior chamber: 9 (5.5%) / 2 (1.2%) Choroidal detachment: 11 (6.7%) / 4 (2.5%) Corneal edema: 0 / 2 (1.2%) Dellen: 2 (1.2%) / 0 Vitreous Hemorrhage: 1 (0.6%0 / 0 Macular edema: 0 / 1 (0.6%)

<table>
<tr><th>Author, citation</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Hypotony Maculopathy</td><td>1 (0.6%)</td><td>1 (0.6%)</td></tr>
<tr><td>Ptosis</td><td>0</td><td>1 (1.2%)</td></tr>
<tr><td>Binocular diplopia</td><td>2 (1.2%)</td><td>2 (1.2%)</td></tr>
</table>
Note: No serious complications were reported.

At 1 year:
Success (IOP > 17 mmHg or < 6 mmHg with clinical hypotony on 2 consecutive visits and a 20% reduction from the decision IOP.) 76.9%
Qualified success (success achieved with medication): 92.5%
Median IOP: 12 mmHg (10-15 mmHg)
Median Medications: 0 (0-0.

The authors concluded that “one-year results demonstrated promising rates of qualified and complete success, decreased drop use, few complications, and infrequent postoperative interventions.”</td></tr>
<tr><td>Fea et al [44]</td><td>A retrospective, open-label, multicenter study with 12-month follow up. The study specifically evaluated the effectiveness and safety of the MicroShunt in 104 patients with POAG (81 eyes) and PXG glaucoma (23 eyes).</td><td>There were no sight threatening events. AEs were mild in severity and resolved with treatment.
<table>
<tr><th>Adverse event,</th><th>n (%)</th></tr>
<tr><td>Hyphema</td><td>8 (7.7)</td></tr>
<tr><td>Choroidal detachment</td><td>5 (4.8)</td></tr>
<tr><td>Hyphema with Hematic Tyndall</td><td>2 (1.9)</td></tr>
<tr><td>Device captured in Tenon’s capsule</td><td>1 (1.0)</td></tr>
<tr><td>Choroidal hemorrhage</td><td>1 (1.0)</td></tr>
<tr><td>Blood clot blocking the lumen</td><td>1 (1.0)</td></tr>
<tr><td>Hypertrophic bleb with corneal dellen</td><td>1 (1.0)</td></tr>
</table>
Complete success (IOP ≤18 mmHg and an IOP reduction of 20%, without medication at 12-month visit): 27 (26.0%)</td></tr>
</table>

Author, citation	Study Design	Key Outcomes
		Qualified Success (An IOP of ≤18 mmHg and an IOP reduction of 20%, with a medication at 12-month visit): 61 (58.7%) **Month 12 compared to baseline**: - Equal to or lower IOP: 90/94 eyes (96%) - IOP reduction of ≥ 20%: 79/94 eyes (84.0%) - IOP reduction ≥ 30%: 66/94 eyes (70.2%). **Mean number of hypotensive medications:** - Baseline::3.0±1.0 - Month 12: 0.8±1.0 The authors concluded that the MicroShunt was "demonstrated to be a safe and effective device for lowering IOP and the need for IOP lowering medications, with a relatively high success rate. However, further investigation is needed to confirm this finding. Adverse events were transient, and no long-term sight-threatening adverse events were reported."
Ibarz Barberá et al. [45]	A prospective, interventional, single city case series with a 3-month follow up. The study specifically evaluated changes in the corneal keratometry, astigmatism and elevation, refraction, axial length (AL), and anterior chamber depth and volume (29 patients, 30 eyes). 24 eyes: The MicroShunt was implanted as a stand-alone procedure (Group 1) 6 eyes: The MicroShunt was combined with cataract surgery (Group 2)	Hypotony (IOP ≤ 5mmHg after surgery): 10% (3 cases, 2 from group 1)) Group 1: IOP was reduced by 60% at 24 hours and 50% at 3 months Group 2: IOP was reduced by 44% at 24 hours and 39% at 3 months 96.4% of patients were free of medication at 3-month visit. The authors concluded *that* "the PRESERFLO Microshunt technique appears to improve the refractive changes caused by classic filtering surgery". When compared to trabeculectomy, which has shown to "induce visually significant changes in the AL, ACD and keratometric parameters, in some cases, lasting more than a year," the PRESERFLO MicroShunt implantation appears to have a clinically nonsignificant effect on ocular biometrics and induces "low and transient corneal and biometric changes only in the very early postoperative period." They stated that the mild refractive changes induced by the MicroShunt "may benefit IOL calculations for combined surgery or even for the implantation of toric and extended depth-of-focus IOLs in specific cases."

Author, citation	Study Design	Key Outcomes
Ibarz Barberá et al. [46]	The study included 40 consecutive patients (46 eyes) at a single center, with a 12-month follow up. The study specifically evaluated the effects of the MicroShunt, on corneal endothelial cell density (ECD). Both ‘‘standalone’’ and combine cataract phacoemulsification and MicroShunt procedures were included, but only pseudophakic eyes were considered for ‘‘standalone’’ MicroShunt implantation.	1 case of significant endothelial cell loss (2.5%) 5 eyes (10.9%) with peripheral anterior synechiae related to transient hypotony in the early postoperative period. The authors concluded that “PRESERFLO implantation into the AC is associated with ECD loss that began in the immediate postoperative period, with ongoing loss of endothelial cells over time, though at slower rates, at least up to 1 year postoperatively. A closer position of the tube to the endothelium is related to a higher loss of ECD. A TE distance greater than 600 µm appears to be a protective factor for endothelial cell preservation.”
Martínez-de-la-Casa et al. [47]	A retrospective, open-label study (55 patients) with a 12-month follow-up. The study was aimed at assessing the effectiveness and safety of the MicroShunt implantation combined with cataract surgery in open-angle glaucoma (OAG) patients. Group 1 (MicroShunt): 35 eyes Group 2 (MicroShunt + phacoemulsification): 22 eyes	No sight threatening events. All AEs were mild and resolved with medical treatment. **Adverse Events** — **N (%)** Hypotony — 1 (1.7%) Siedel — 3 (5.2%) Device obstruction — 2 (3.5%) Choroidal detachment — 2 (3.5%) Conjunctival fibrosis — 5 (8.6%) Hyphema — 2 (3.5%) Device close-to-endothelium — 5 (8.6%) Implant extrusion — 1 (1.7%) **Complete success** (IOP ≤ 18 mmHg at month-12 and an IOP reduction ≥ 20% without medication): 36 (62.1%) **Qualified success** (success with medication): 48 (82.8%) **Mean IOP** - Baseline: 21.5 ± 3.3 mmHg - Week 1: 10.4 ± 3.1 mmHg

<table>
<tr><th>Author, citation</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>- Month 1: 11.6 ± 2.5 mmHg
- Month 3: 13.3 ± 3.3 mmHg
- Month 6: 14.3 ± 3.0 mmHg
- Month 12: 14.6 ± 3.5 mmHg

Number of medications:
Baseline: 2.3 ± 0.5
Month 12: 0.2 ± 0.5

PMS was effective at lowering IOP and reducing the reducing the number of hypotensive medications in patients with OAG over a 12-months period. The authors concluded that no differences were observed between “PMS alone or in combination with cataract surgery in either IOP lowering or reduction in number of hypotensive medications.”</td></tr>
<tr><td>Nobl et al. [49]</td><td>A retrospective, single center interventional study with a 12 month follow-up. The study specifically evaluated the safety and efficacy of the device in 41 patients with PEXG (20 eyes) and POAG (26 eyes).</td><td>Adverse Events
<table>
<tr><th></th><th>POAG (n = 26)
N (%)</th><th>PEXG (n = 20)
N (%)</th></tr>
<tr><td>Hypotony</td><td>3 (11.5)</td><td>8 (40.0)</td></tr>
<tr><td>Choroidal detachment</td><td>1 (3.8)</td><td>6 (30.0)</td></tr>
<tr><td>Flat anterior chamber</td><td>3 (11.5)</td><td>3 (15.0)</td></tr>
<tr><td>Macular folds</td><td>1 (3.8)</td><td>0 (0.0)</td></tr>
<tr><td>Hyphema</td><td>2 (7.7)</td><td>4 (20.0)</td></tr>
<tr><td>Corneal complications</td><td>1 (3.8)</td><td>3 (15.0)</td></tr>
<tr><td>Corneal dellen</td><td>0 (0.0)</td><td>0 (0.0)</td></tr>
<tr><td>Corneal erosion</td><td>0 (0.0)</td><td>2 (10.0)</td></tr>
<tr><td>Corneal edema</td><td>1 (3.8)</td><td>1 (5.0)</td></tr>
<tr><td>Seidel positive</td><td>1 (3.8)</td><td>1 (5.0)</td></tr>
<tr><td>Implant extrusion</td><td>0 (0.0)</td><td>0 (0.0)</td></tr>
<tr><td>Blebitis</td><td>0 (0.0)</td><td>0 (0.0)</td></tr>
<tr><td>Loss of light perception</td><td>0 (0.0)</td><td>0 (0.0)</td></tr>
</table>
Success- IOP between 6 and 17 mmHg on two connective visits or IOP reduction 20% or higher on two consecutive visits</td></tr>
</table>

<table>
<tr><th>Author, citation</th><th>Study Design</th><th>Key Outcomes</th></tr>
<tr><td></td><td></td><td>Complete success -achieved without medication
Qualified success- achieved with medication
POAG: complete success 73.1%; qualified success 76.9%
PEXG: complete success 75.0%; qualified success 80.0 %

The authors concluded that “MicroShunt implantation is a safe procedure in PEXG and has similar IOP-lowering potential and surgical effectiveness in PEXG compared to POAG.” Additionally, they stated that “early postoperative hypotony and choroidal detachments seem to be more common in PEXG but resolved in all cases and were not vision threating.”</td></tr>
<tr><td>Pillunat at al [50]</td><td>An institutional prospective interventional cohort study with 6- month follow up. The study specifically evaluated the efficacy and safety of the MicroShunt with MMC (26 patients, 26 eyes) compared to trabeculectomy with MMC (26 patients, 26 eyes).</td><td>Adverse events reported
<table>
<tr><th>Early Postoperative (within 4 weeks) complications and interventions</th><th>MicroShunt</th><th>Trab.</th></tr>
<tr><td>Seidel positive leakage</td><td>0 (0)</td><td>3 (12%)</td></tr>
<tr><td>Hypotony ≤5mmHg at any time</td><td>18 (69%)</td><td>7 (27%)</td></tr>
<tr><td>Hypotony requiring AC reformation</td><td>4 (15%)</td><td>6(23%)</td></tr>
<tr><td>Choroidal Effusion</td><td>4 (15%)</td><td>5 (20%)</td></tr>
<tr><td>Encapsulation + bleb needling</td><td>1 (4%)</td><td>3 (12%)</td></tr>
<tr><th>Intermediate postoperative (4 weeks to 6 months) complications and interventions</th><th></th><th></th></tr>
<tr><td>Laser suture lysis</td><td>0</td><td>3 (12%)</td></tr>
<tr><td>Encapsulation +bleb needling</td><td>0</td><td>4 (15%)</td></tr>
<tr><td>Prolonged hypotony + AC stabilization</td><td>0</td><td>2 (8%)</td></tr>
</table>
Note: There were no serious adverse events reported in either group.

Complete success -“mdIOP and peak diurnal IOP (a) ≤18 mmHg for cases with mild glaucoma without threat of fixation and (b) mdIOP ≤14 mmHg and peak IOP ≤18 mmHg (AGIS 2000) for cases with mild glaucoma with threat of fixation, moderate and advanced cases without clinical hypotony and the need of any IOP-lowering medication</td></tr>
</table>

Author, citation	Study Design	Key Outcomes
		Qualified success- the same criteria but allowed for IOP-lowering medication.

Success and Failure Rates

	MicroShunt n=26	Trab. n=26
No. (%) of eyes below≤18 mmHg without meds	26 (100)	26 (100)
No. (%) of eyes below≤14 mmHg without meds	24 (92)	25 (96)
No. (%) of eyes with≥20% mdIOP reduction	20 (77)	22 (84)
No. (%) of eyes below≤18 mmHg of peak IOP	25 (96)	24 (92)
No. (%) of eyes with≥20% peak IOP reduction	18 (69)	21 (81)
Complete success[a]	7 (100)	3 (100)
Complete success[b]	17 (90)	20 (87)
Qualified success	1 (5)	0 (0)
Failure	1(5)	3 (13)

[a]Mild cases without threat of fixation and≤18 mmHg.
[b]Mild cases with threat of fixation and moderate and advanced cases≤14 mmHg.

The authors concluded that the findings in their study support that the PRESERFLO MicroShunt is capable of lowering IOP as effectively as trabeculectomy but with fewer complications, less postoperative interventions, and a faster recovery. Furthermore, they stated that the PRESERFLO MicroShunt has the "potential to be a treatment option for moderate to advanced glaucoma cases, yet being less invasive with less complications and necessary interventions compared with trabeculectomy."

Author, citation	Study Design	Key Outcomes
Quaranta et al [51]	A multi-center retrospective chart review of 31 patients with a 12-month follow up. The study specifically evaluated the efficacy and safety of MicroShunt in POAG eyes after each subject had single failed trabeculectomy performed at least 6 months previously, IOP ≥ 21 mmHg despite maximum tolerated medical therapy, and follow-up of at least 12 months after MicroShunt implantation.	**Adverse Events:** Transient hypotony: 6 (19.3%). Choroidal effusion: 3 (9.6%) Shallow anterior chamber: 1 (3.2%) Hyphema: 1 (3.2%) All complications resolved spontaneously. **Complete surgical success** (without medications) **Qualified surgical success** (with or without medications) At 12 months: - First criterion: IOP ≤ 17 mmHg and ≥ 6 mmHg, with ≥ 20% IOP reduction from baseline Complete success: 67.74%; Qualified success: 93.54% - Second criterion: IOP ≤ 14 mmHg and ≥ 6 mmHg, with ≥ 25% IOP reduction from baseline: Complete success: 67.74%; Qualified success: 90.32% - Third criterion: IOP ≤ 12 mmHg and ≥ 6 mmHg, with ≥ 30% IOP reduction from baseline. Complete success: 45.16%%; Qualified success: 48.38% Mean preoperative number of medications - Preoperative: 3.29 ± 0.64 - 12 months: 0.46 ± 0.77 The authors concluded that PRESERFLO MicroShunt is effective in reducing IOP after a follow-up of 12 months in eyes with POAG and a single failed trabeculectomy, with a favorable safety profile. Compared to glaucoma drainage implant surgery or trabeculectomy, PRESERFLO MicroShunt surgery is less invasive and may be a “viable choice as a second surgery in these eyes. “
Vastardis et al [52]	The 6-month results of a single center retrospective case series study. The study specifically evaluated the Microshunt implant with and without Ologen collagen	Transient hypotony (IOP < 5 mmHg) for 1 week: 12 (24%) with 6 of the 12 presenting with a minor choroidal detachment which resolved No complications or interventions in 16 (52%) eyes. No adverse or severe sight-threatening complications.

Author, citation	Study Design	Key Outcomes
	matrix (OCM) implantation in 50 pseudophakic eyes with moderate to advanced POAG. Group A- MicroShunt (25 eyes) Group B- 25 eyes (MicroShunt and OCM implantation).	Absolute success rate (a. percentage of eyes achieving 5 ≤ IOP≤21 mmHg at 6 months, b.5 ≤ IOP ≤16 mmHg and c. 5 ≤IOP≤21 mmHg without additional medication or surgery) - Group A: a-48%, b-64% and c-68% - Group B: a-45.8%, b-45.8% and c-58.3% Qualified success rate (a. percentage of eyes achieving 13 ≤ mmHg, b. IOP ≤16 mmHg and c. 5 ≤IOP≤21 mmHg with or without additional medication) - Group A: a-68%, b-88% and c-92% - Group B: a-70.8%, b-91.8% and c-95.8% Mean IOP reduction at 6 months: - Group A: 49.06% - Group B: 53.01%. Mean medication reduction at 6 months: - Group A: 98.02% (median reduction of 2.5 medications) - Group B: 94.44% (median reduction of 2.5 medications) The authors concluded that "both groups showed equal results in terms of cumulative and mean IOP reduction, medication reduction as well as in absolute and qualified success rates. No significant difference was found in any parameters tested between Preserflo Microshunt with MMC 0.2 mg/ml and with or without OCM implantation at 6 months. Long-term follow-up is required to further evaluate this data."
Wagner et al [53]	A retrospective single center case-control - study with a 6-month follow-up. The study specifically evaluated the surgical success and the post-operative development of IOP between XEN45 Gel Stent, MicroShunt, and trabeculectomy with MMC (35 consecutive patients with refractory open-angle glaucoma (primary open-angle glaucoma, secondary open-angle or normal-tension glaucoma) who underwent standalone MicroShunt	Two Trab. patients presented with hypotony (IOP ≤ 5 mmHg) at 6 months. At 6 months: - **Success** (IOP>5 and <18 mmHg, and no revision surgery or loss of light perception,): Trab.: 73.5%, XEN; 51.4%, MicroShunt: 74.2% - **Strict success** (success and IOP reduced by at least 20% compared to baseline): Trab.: 64.7%, XEN 31.4%, MicroShunt**:** 54.8%.

Author, citation	Study Design	Key Outcomes
	implantation and were matched with one patient after XEN implantation and one patient after trabeculectomy (total 105 eyes).	- **Qualified success** (post operative medication was necessary to achieve IOP ≤ 18 mmHg, no surgery was necessary): Trab.: 94.1, XEN: 77.1%, MicroShunt:90.6% **Medications at 6 months were comparable**: Trab: 0.5 ± 1.0, XEN: 0.7 ± 1.0, MicroShunt: 0.4 ± 0.8. The authors concluded that all three interventions have a beneficial outcome in terms of IOP and all three resulted in sufficiently low post-operative IOP values, allowing them to all be considered adequate treatment options to control intraocular pressure in glaucoma.
Case Reports		
Brambati at al [37]	A case report of endophthalmitis following bleb needling in a patient previously implanted with a MicroShunt	The device was used treat bilateral malformative glaucoma. The author concluded that "endophthalmitis can occur after NR in an eye with a PRESERFLO MicroShunt implant which therefore does not prevent reflux of bacteria from a filtering bleb to the anterior chamber."
Gizzi et al [39]	A case report of malignant glaucoma in a patient with primary open angle glaucoma (POAG).	The authors concluded that "apart from the propensity for a small tube such as the PMS to obstruct with iris when the AC is shallow, management is similar to other scenarios in which malignant glaucoma may develop."
Micheletti et al [40]	A case report of delayed-onset hemorrhagic choroidal detachment in a patient undergoing anticoagulant therapy with Dabigatran (a novel oral anticoagulant).	The authors concluded that "great attention must be taken in patients with glaucoma under treatment with a novel oral anticoagulant, also when planning PreserFlo MicroShunt implantation."
Bunod et al [42]	A two patient case series where the MicroShunt is reported to have extruded through the conjunctiva	The authors noted that "there are few cases reported and therefore more studies are required to determine a codified management strategy for MicroShunt extrusion." The authors conclude that "PreserFlo MicroShunt® exposure is a potentially vision-threatening complication because of the risk of endophthalmitis. Potential risk factors include the absence of a Tenon's flap and pre-existing ocular surface inflammation. Ocular surface inflammation should be detected and treated prior to PM implantation. If a deficiency in Tenon's capsule is

Author, citation	Study Design	Key Outcomes
		noted intraoperatively, close monitoring should be performed because of the higher risk of PM exposure."
Chamard et al [43]	A 2 patient case series (total of 16 patients) Additionally, five-year follow up on 10 of 16 patients was reported.	Case 1- At 5 years, a device-corneal touch, and a low endothelial cell count. Case 2- After 5 years, a low endothelial cell density. In addition to the 2 patients who are the subject of this article, 5 year follow-up was available in 10 additional patients: mean ± SD central endothelial cell count was 1946 ± 480 vs 2095 ± 339 cells/mm2 in implanted and fellow eyes, respectively. The authors concluded that "a prospective study with long term follow-up combining pre and postoperative endothelial cell count and AS-OCT or UBM evaluation of the device positioning would be of great interest to assess the real impact of Preserflo MicroShunt and the major risk factors of ECL."
Michaels et al [48]	A case report of trans-conjunctival MicroShunt erosion.	Excellent initial postoperative outcomes were observed at 6 months. After postponed follow-up due to the SARS-CoV-2 pandemic, at more than a year postoperative, the patient presented with a flat bleb and nonfunctioning right implant, and a significantly encapsulated bleb was observed on the left. The right was left in situ and a second device was implanted. The authors suggested that the original MicroShunt be removed when performing revision surgery if it is nonfunctional, and the secondary application of MMC should also be limited in cases where previous conjunctival compromise is suspected.

5.3.2 Summary of Clinical Data from Post-Market Clinical Follow-Up Studies Conducted by the Manufacturer

Post-market clinical follow-up activities have been undertaken by InnFocus, including a post market clinical follow up study. These activities include clinical review of data found as part of post-market surveillance for the MicroShunt, as well as a similar device (note no equivalent devices have been identified). Other activities and inputs include review of clinical experience (i.e., complaints/serious incidents), field safety corrective actions/recalls, feedback from users, and data from other sources, such as clinical trial databanks, etc.

Feedback from users and distributors have shown that the MicroShunt remains appropriate for use in alignment with the labeling. The clinical literature showed that no new information relating to the safety and performance of the device has been identified.

5.3.3 Summary of Clinical Data from Analysis of Clinical Data from Medical Device Registries

At this time, there are no pertinent medical device registries.

5.4 An Overall Summary of the Clinical Performance and Safety

5.4.1 Review of Clinical Data

As part of the clinical evaluation, a review of available clinical data was performed. This data includes a total of more than 35,000 implantations, 20 publications reporting clinical data and *State of the Art data*, four completed clinical investigations, and devices shipped commercially through December 31, 2021. The available clinical data from the clinical investigations, published literature, and reported complaints was compared against published metrics (representing *State of the Art*) for safety and performance. Safety characteristics included various complications associated with all glaucoma drainage implants. Performance metrics included a reduction in IOP, having a less complex surgical technique and risk profile as compared with trabeculectomy, a low erosion rate of ≤ 1.0% within one to two years post operatively, a reduction in the use of glaucoma medications for one to two years post-operatively, and a reduced post-operative incidence of hypotony as compared with trabeculectomy. The clinical evaluation showed that the incidence of safety and performance were within an acceptable range (within the rates seen with *State of the Art* identified). This is further supported with conformance to international standards, also representing *State of the Art*.

5.4.2 Review of Clinical Safety

Analysis was done to aggregate the safety data presented in the reviewed literature as well as in the company conducted clinical investigations and, in the company held complaint data. Refer to Table 1 for a discussion of residual risks and undesirable effects. There was consistency between the clinical data and the risk management documentation.

5.4.3 Review of Clinical Performance

Current clinical performance and clinical safety claims foreseen by InnFocus remain supported by available evidence. Based on available data, documented residual risks remain acceptable, as evidenced by comparing the rates from complaints and the available clinical data against *State of the Art*. Below is a description of medical claims, including expected clinical benefit, and supporting evidence. Table 5 details the clinical claims/benefits for which there are associated performance metrics.

Table 5 Claims and Associated Performance Metrics

Clinical Claim/Benefit	Associated Performance Metrics
Reduction in IOP	A predictable and consistent IOP reduction post-operatively, i.e., ≥ 20% reduction in IOP from baseline.
Less complex surgical technique and risks as compared with trabeculectomy	Reduced early post-operative complications (less than one month) and interventions associated with the PRESERFLO MicroShunt as compared to trabeculectomy.
The device is soft, smooth, and flexible	A low erosion rate of ≤ 1.0% within one to two years post operatively, associated with the use of the PRESERFLO MicroShunt
Reduction in the use of glaucoma medications for one to two years post-operatively	50% of PRESERFLO MicroShunt patients are able to discontinue all glaucoma medications for 1-2 years post operatively, while maintaining an acceptable IOP.
Reduced post-operative incidence of hypotony as compared with trabeculectomy	A statistically lower rate of hypotony post operatively, as compared with trabeculectomy

Table 6 identifies performance metrics and targets, and provides results against the metrics, based upon analyzed clinical performance data for the MicroShunt. Note that with additional post-market clinical follow-up, the expected frequency/quantification results will be adjusted over time.

Table 6 Performance Metrics

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
A predictable and consistent IOP reduction of ≥ 20% from baseline.	≥ 20% reduction in IOP from baseline.	• ≥ 20% reduction in IOP from baseline in 61% to 91% of eyes, in 3 clinical trials, at 6 months. • ≥ 20% reduction in IOP from baseline in 55% to 96% of eyes, 4 clinical trials, at 12 months. • ≥ 20% reduction in IOP from baseline in 51%-91% of eyes, in 4 clinical trials, at 24 months. Longer term follow-up in one clinical trial shows a greater than 20 % reduction in IOP from baseline at the following timepoints: • 36 months: 87% of eyes	≥ 20% reduction in IOP from baseline, reported in reviewed literature: • At 6 months: mean IOP reduction in 49% to 77% of eyes [50, 52, 53] • At 12 months: mean IOP reduction of 40% to 84% of eyes, [34, 44, 47, 49, 51] • At 24 months: mean IOP reduction of 39% [34]	The MicroShunt provides a predictable and consistent reduction in IOP, as measured at various timepoints. Data reported in the four clinical investigations showed IOP reductions from baseline of ≥ 20% in 51% to 96% of patients, at varying time points through 24, 36, 48 and 60 months. The literature reported IOP reductions greater than 20%, in 39%-84% of eyes, at varying timepoints up to 24 months. Notes: • In the reviewed literature some studies defined complete success in terms of “specific IOP ranges”, or elimination of glaucoma medication”, vs a ≥ 20% reduction in IOP from baseline. The Company’s post market clinical follow up studies will provide longer

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
		• 48 months: 74% of eyes • 60 months: 78% of eyes		term data (beyond 60 months). The data reported in the clinical investigations and the reviewed literature confirm that this performance metric is met.
Reduced early post-operative complications (occurring within 1 month post-surgery), and interventions associated with the MicroShunt as compared to trabeculectomy	Less complications vs Trabeculectomy.	A "2 phase" pivotal clinical trial representing 70% of the eyes in the multi-study clinical investigation program showed that MicroShunt patients had less variability in IOP at day 1 and week 1 follow up visits, and less interventions at 1 month as follows: • ~ 10 % for the MicroShunt group in both phases, as compared to the Trabeculectomy group which had 40% in Phase 1, and 50% in Phase 2. • Phase 2 data reported additional, unscheduled office visits prior to the "Day 7 scheduled" visit: 18.3% higher for the Trab group vs 6.1% for the MicroShunt group.	The MicroShunt group had fewer complications, less post-operative interventions, and faster recovery vs the Trabeculectomy group [50, pg 11].	Clinical investigation data and the reviewed literature confirmed that MicroShunt patients had less early post-operative complications and interventions as compared with Trabeculectomy patients. Clinical studies concluded: - MicroShunt surgery is less traumatic than trabeculectomy. - The MicroShunt provides a more immediate and controlled reduction in IOP. - MicroShunt group subjects had fewer early postoperative interventions compared to subjects in the Trabeculectomy group, and needed fewer office visits in the early postoperative period. - MicroShunt patients had less need for cataract surgery, and were more likely to maintain their preoperative best

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
		• Phase 2 data also reported additional (unscheduled) office visits prior to the "scheduled Month 1" study visit for Trabeculectomy at a rate of 66.4% vs 28.6% for the MicroShunt.		corrected visual acuity (BCVA) postoperatively. Phase 2 clinical investigation data reported: - The MicroShunt group had a much larger median time to intervention (medication and non-medication combined) as compared to the Trabeculectomy group (506 days for the MicroShunt group vs. 29 days for the Trab group), demonstrating that MicroShunt subjects were able to avoid intervention for a considerably longer period of time. - The MicroShunt group had less variability in IOP during the early postoperative period, which was viewed as a meaningful benefit to both patients and their surgeons because fewer cases of hypotonus IOP and IOP spikes translates to fewer IOP related AEs and fewer emergent IOP related interventions. Phase 1 and Phase 2 clinical investigation results, and the reviewed literature are in alignment and confirm

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
				that this performance metric has been met.
A low erosion rate of ≤ 1.0% within two years post-operatively, associated with the use of the MicroShunt.	≤1.0% rate of erosion as measured at 2 years post-operatively.	There were 2 reported cases of erosion through the conjunctiva, in the four clinical investigations conducted.	In the literature reviewed, the reported rates of erosion range from 0% to 1.7% [38, 41, 42, 47, 48].	Erosion of a device though the conjunctiva is a potential complication following implantation of any glaucoma drainage implant. The reviewed literature included rates of 0%, 1.2% and 1.7% [38, 41, 47], with the two rates above 1.0% reflecting single case reports of erosion. In addition, there were 2 case reports of erosion [42, 48]. The overall rate of erosion within the first 24 months of implantation of the MicroShunt, as reported in the clinical investigations, the literature reviewed, and complaints received, is far below 1.0%, actually occurring at a rate of under 4 in 10,000. This rate is substantially lower than the *state of art* which can range from 1% to 5% [12].
50% of MicroShunt patients are able to discontinue all glaucoma medications for 1-2 years post operatively, while maintaining an acceptable IOP.	50% of patients are medication free 1-2 years postoperatively	• 66.7% to 72.4 % of clinical investigation patients were medication free at 12 months. • 56% to 61.1% of clinical investigation patients were medication free at 24 months.	The reviewed literature reported reductions in medication at 12 and 24 months. <u>At 12 months:</u>	Reduction of glaucoma medication is desirable as patients frequently do not comply with their regimens, and vision loss continues. If the implanted device is effective and reduces intraocular pressure, the subject may reduce or eliminate glaucoma medication therapy.

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
			• The median of "0" medications (IQR 0-2) at 1 year [38]. • Reduction in the mean number of medications from preop/baseline: 3.0±1.0 to 0.8±1.0 [44] 2.3±0.5 to 0.2 ± 0.5 [47] 3.29± 0.64 to 0.46% ±0.77 [51]. <u>At 24 months:</u> • 64% of patients were free of IOP lowering medications [34].	• Data from 2 clinical investigations (representing 81% of the total patients treated in InnFocus' trials) and literature confirm that ≥50% of patients were able to discontinue glaucoma medications 1-2 to years post operatively while maintaining an acceptable IOP. • In 2 remaining clinical trials (19% of total patients treated), and with the literature cited at 12 months, reduction in post operative glaucoma medications is reported as a *change in the mean number of medications from baseline, over time*. This data similarly reflects significant change. The remaining 19% of patients in the other two clinical investigations showed reduction in medications as follows: - Mean baseline of 2.3 medications reduced to 0.3 medications. - Mean baseline of 2.1 medications reduced to 0.6 medications.
A statistically lower rate of hypotony post operatively, as compared with trabeculectomy	Lower rate of hypotony in the MicroShunt population vs the Trabeculectomy population.	A "2 phase" pivotal clinical trial which treated 70% of all eyes in the MicroShunt clinical investigation program compared the safety and performance of the	The literature reviewed revealed the following: Hypotony "at any time within 4 weeks" post-surgery:	Clinical investigation data showed significantly less hypotony in the MicroShunt vs the Trabeculectomy group as measured in the "2 phase" pivotal study. In addition;

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
		MicroShunt to that of Trabeculectomy. • Hypotony in the MicroShunt groups ranged from 14.1% (Phase 1), to 30.9% (Phase 2); vs 68.4% and 51.1% respectively, in the Trabeculectomy group. • Hypotony requiring intervention was evaluated in Phase 2. At month 24, the MicroShunt group reported 2%, compared to 7.6% in the Trabeculectomy group as requiring intervention. Clinically significant hypotony was evaluated as an outcome in Phase 2, and was defined as being < 6mmHg at any time, *and accompanied by hypotony maculopathy, flat anterior chamber, corneal folds or striae, choroidal effusion, or suprachoroidal hemorrhage.* It was reported at two time points:	• MicroShunt was higher (69% vs 27% for Trab) [50] • AC reformation was higher in Trab at 23% vs 15% for the MicroShunt. [50] Hypotony "at 4 weeks to 6 months" post-surgery: • Prolonged hypotony plus AC stabilization was "0" for MicroShunt vs 8% for Trab [50]. • Significant hypotony was 5.7% for Trab vs "0" for the MicroShunt [53].	• Hypotony requiring intervention was significantly lower for the MicroShunt vs Trab., at 24 months. • Clinically significant hypotony was lower for the MicroShunt group at both the 12 and 24 month timepoints There were two articles in the reviewed literature. One article [50], while reporting a higher hypotony rate for the MicroShunt group at 4 weeks post-surgery, reported that hypotony requiring AC reformation occurred more frequently in Trab patients. This same article also reported higher rates of prolonged hypotony requiring AC stabilization in the Trab group in the 4 weeks to 6 month timepoint. The second article reported Trab patients with hypotony at six months, but no cases in the MicroShunt patient group [53].

Performance Metric	Target quantification	Clinical Investigation Results	Literature Results	Discussion
		• Month 12: reported in 3.8% of MicroShunt eyes vs 6.1% of Trabeculectomy eyes • Month 24: reported in 4.1% of MicroShunt eyes vs 6.1% of Trabeculectomy eyes.		

5.4.4 Alignment with Acceptable Benefit/Risk Profile

The data supporting the MicroShunts' indication for use provides evidence that, in addition to the clinical data from the four clinical investigations that were conducted, there has been a low number of complaints (0.44 %) with devices distributed over a 54-month period. The clinical evaluation of the product is sufficient to demonstrate both clinical safety and performance of the MicroShunt based on the multiple clinical investigations conducted, the literature reviewed, the low complaint rate and the fact that there have been no recalls/field safety corrective actions initiated.

The most recent evaluation of post-market activities (i.e., the post-market surveillance report) indicates that the device remains appropriate for use in alignment with the labeling. The clinical literature collected as part of post-market surveillance has shown that no new information relating to the safety and performance of the device has been identified. Post-market surveillance continues, with ongoing collection of feedback from users and distributors, congress attendance, review of complaints, field safety corrective actions, nonconformities and CAPAs, review of adverse events and field safety actions for a similar device, as well as periodic reviews of literature.

Analysis of the up-to-date clinical data (from the literature and InnFocus-conducted clinical studies) shows that there is a preponderance of data supporting the MicroShunt. Further data is needed to support longer-term follow-up; lifetime is currently supported with up to 5 years of clinical data and non-clinical testing data. Collection of longer-term data (i.e., the INN-005 Extension study and INN-003 Data Collection) is identified in the post-market clinical follow-up plan.

5.4.5 Review of Acceptability of Side-Effects

No publication revealing unknown side effects has been found. The events reported as part of the clinical investigations and as part of the post-market vigilance did not address any side effect that was not reflected in the Company's current risk analysis. The risks associated with the intended use of the MicroShunt constitute acceptable risks when weighed against the intended benefits to the patient and are compatible with a high level of protection of health and safety.

The evaluation and its conclusions were also reviewed for residual risks, uncertainties, and unanswered questions. These included identification of any unexpected or rare complications, or any uncertainties related to or long-term use.

5.4.6 Conformity with General Safety and Performance Requirements

The MicroShunt continues to demonstrate acceptable safety and performance supported by clinical studies conducted and the complaint rates evaluated. The MicroShunt is in compliance with the applicable General Safety and Performance Requirements (GSPRs), related to safety and performance, specifically GSPR number's 1 and 8.

5.5 Ongoing or planned post market clinical follow-up

Post-market clinical follow-up (PMCF) includes a review of clinical literature, review of clinical experience (i.e., complaints/serious incidents), review of field safety corrective actions and recalls, review of feedback obtained from users and distributors, and review of clinical study data (such as information post-market clinical follow-up studies). Safety and performance of the MicroShunt is commensurate with other glaucoma drainage devices on the market. Overall, the post-market clinical follow-up has documented that the use of the MicroShunt remains positive, with no trends or concerns with the complaints reported. From the PMCF, there were no new risks reported from the literature or from complaints that warrant update to the device design or risk management system.

Currently, there is one PMCF study being conducted. The INN-005 Extension study is collecting additional safety data, for the INN-005 study cohort through five years of post-operative follow-up. In addition, a second PMCF data collection (INN-003 Data Collection) is planned to begin in the near term. This study will collect data 10 or more years postoperative, in the cohort of subjects implanted in the INN-003 study.

6 Diagnostic or Therapeutic Alternatives

The treatment of glaucoma is largely patient-specific, no one-treatment-fits-all solution exists. Depending upon the extent of IOP lowering required, and the patient's treatment history and response, surgeons often need to weigh the risks and benefits of each option to determine the best course of treatment. Current standards and accepted practice guidelines that relate to the management of glaucoma provide a description of the current treatment paradigms.

Treatment of POAG is achieved by lowering IOP to within a target range via medication, laser surgery, or incisional surgery [4, 7, 13, 18-20]. Decreasing IOP is noted by the European Glaucoma Society as being "the only approach proven to be effective in preserving visual function" [13]. Generally, medication or laser surgery (trabeculoplasty) are appropriate in early or moderate/advanced stages of the disease [19, 20]. Moderate/advanced glaucoma can also be treated by incisional surgery techniques and/or cyclophotocoagulation or cryotherapy, whereas end-stage (refractory) glaucoma is treated by medication and/or cyclophotocoagulation or cryotherapy, and rehabilitation services [20].

The current treatment paradigm for glaucoma usually begins with glaucoma medication followed by laser treatment, or vice versa. If these therapies fail, canal-based or suprachoroidal-based interventions may be attempted as a means of lowering IOP, and if these interventions do not drop IOP sufficiently, surgical filtration procedures are recommended. Traditional surgical-based filtering procedures include trabeculectomy and large glaucoma drainage implants (GDI). The newer Minimally Invasive Glaucoma Surgery (MIGS) devices drain to Schlemm's Canal, or the suprachoroidal space provides a safer operation procedure, but its IOP reduction is relatively small.

7 Profile and Training

The intended users of the MicroShunt are ophthalmologists/ophthalmic surgeons specializing in the treatment of glaucoma (including surgeons specializing in anterior segment and cataract surgery) who have been trained in the theoretical, technical, and clinical aspects of glaucoma. The MicroShunt is surgically and permanently implanted only by ophthalmologists/ophthalmic surgeons.

All new medical practitioners must complete a required PRESERFLO MicroShunt training program and be certified by a distributor representative, prior to implanting the device without distributor support present during the procedure. Surgeons are trained in the operative procedures and the handling of intraoperative challenges.

8 Harmonized Standards and Common Specifications

Below in Table 7 is a listing of the pertinent standards associated with the MicroShunt.

Table 7 Harmonized Standards and Common Specifications

Standard / Regulation/Guidelines	Description
ANSI Z80.27-2014 (R2019)	American National Standard for Ophthalmics - Implantable Glaucoma Devices
ASTM D4169 – 23E1	Standard Practice for Performance Testing of Shipping Containers and Systems
ASTM F88/F88M 2023	Standard Test Method for Seal Strength of Flexible Barrier Materials
ASTM F1608 –21	Standard Test Method for Microbial Ranking of Porous Packaging Materials (Exposure Chamber Method)
ASTM F1886/ F1886M -16	Standard Test Method for Determining Integrity of Seals for Flexible Packaging by Visual Inspection
ASTM F1980-21	Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices
DIN EN ISO 20417	Information supplied by the manufacturer with medical devices
BS EN 62366-1:2015+A1:2020	Medical devices-Application of usability engineering to medical devices
EN ISO 10993-3:2014	Biological evaluation of medical devices – Part 3: Tests for genotoxicity, carcinogenicity, and reproductive function
EN ISO 10993-5:2009	Biological evaluation of medical devices – Part 5 Tests for in vitro cytotoxicity
ISO 10993-13:2010	Biological evaluation of medical devices - Part 13: Identification and quantification of degradation products from polymeric medical devices
EN ISO 11737-1:2018/A12021	Sterilization of health care products - Microbiological methods - Part 1: Determination of a population of microorganisms on products
EN ISO 11737-2: 2020	Sterilization of health care products. Microbiological methods-Part 2: Tests of sterility performed in the definition, validation and maintenance of a sterilization process

Standard / Regulation/Guidelines	Description
EN ISO 13485:2016/A11:2021	Medical devices - Quality management systems - Requirements for regulatory purposes
EN ISO 14155:2020	Clinical investigation of medical devices for human subjects - Good clinical practice
EN ISO 14971:2019/A11:2021	Medical Devices - Application of risk management to medical devices
EN ISO 15223-1:2021	Medical devices - Symbols to be used with information to be supplied by the manufacturer - Part 1: General requirements
ISO 10993-1:2018	Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process
ISO 10993-6:2016	Biological evaluation of medical devices — Part 6: Tests for local effects after implantation
ISO 10993-7:2008/AMD 1:2019	Biological evaluation of medical devices — Part 7: Ethylene oxide sterilization residuals — Amendment 1: Applicability of allowable limits for neonates and infants
ISO 10993-7:2008/COR 1:2009	Biological evaluation of medical devices — Part 7: Ethylene oxide sterilization residuals — Technical Corrigendum 1
ISO 10993-9:2019	Biological evaluation of medical devices — Part 9: Framework for identification and quantification of potential degradation products
ISO 10993-10:2021	Biological evaluation of medical devices – Part 10: Tests for irritation and skin sensitization
ISO 10993-11:2017	Biological evaluation of medical devices – Part 11: Tests for systemic toxicity
ISO 10993-12:2021	Biological evaluation of medical devices – Part 12: Sample preparation and reference materials
ISO 11135:2014	Sterilization of health-care products — Ethylene oxide — Requirements for the development, validation and routine control of a sterilization process for medical devices
ISO 11607-1:2019	Packaging for terminally sterilized medical devices — Part 1: Requirements for materials, sterile barrier systems and packaging systems
ISO 11607-2:2019	Packaging for terminally sterilized medical devices — Part 2: Validation requirements for forming, sealing and assembly processes
ISO 11979-5:2020	Ophthalmic Implants – Intraocular Lenses Part 5: Biocompatibility.
ISO 11979-6:2014	Ophthalmic implants - Intraocular lenses - Part 6: Shelf-life and transport stability testing
ISO 14630:2024	Non-active surgical implants – General requirements
MDCG 2019-9	Summary of safety and clinical performance A guide for manufacturers and notified bodies

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SUMMARY OF SAFETY AND CLINICAL PERFORMANCE (Patients)

Document revision:
Date issued:

This Summary of Safety and Clinical Performance (SSCP) is intended to provide public access to an updated summary of the main elements of the safety and clinical performance of the PRESERFLO MicroShunt. The information presented below is written for patients or lay persons. A more extensive and technical summary of the PRESERFLO MicroShunt's safety and clinical performance, prepared for healthcare professionals, appears in the first part of this document.

The section of the SSCP is not intended to give general advice on how to treat a medical condition. You should contact your healthcare professional if you have questions about your medical condition and about the use of this or any device in response to your particular situation. This SSCP does not replace an Implant Card, or the *Instructions for Use* for the PRESERFLO MicroShunt.

1 Identification of the Device

- **Device Trade Name**

  PRESERFLO™ MicroShunt

- **Basic Unique Device Identification System – Device Identifier (UDI-DI)**

  GLT-001 – UDI #04987084315700

  GLT-001L – UDI #04987084319845

- **Manufacturer's Name and Address**

  InnFocus, Inc.
  12415 S.W. 136 Avenue, Unit 3
  Miami, Florida, 33186
  USA

- **Manufacturer's Single Registration Number (SRN)**

  SRN: US-MF-000003951

- ## Class of Device

  Pursuant to Annex VII Classification Rules in the European Medical Device Regulation 2017/745, the PRESERFLO MicroShunt is a Class IIb per Rule 8. The device is an implantable device for long term implantation

- ## Initial Year of Certification

  The PRESERFLO MicroShunt (hereafter MicroShunt) received initial CE marking in 2012. CE certification allows the device to be CE marked and placed on the market in the European Union.

- ## Authorized Representative, if applicable

  EMERGO EUROPE
  Westervoortsedijk 606827 AT Arnhem, The Netherlands
  SRN: NL-AR-000000116

- ## Notified Body Name/Single Identification Number

  TÜV SÜD

  CE number 0123

2 Intended Use of the Device

o Intended Purpose/Use

The MicroShunt is intended to drain fluid from one area of the eye into another area in the eye, in order to lower pressure, referred to as "intra-ocular pressure" or IOP, within the eye.

o Indications and Intended Patient Groups

The MicroShunt is intended for reduction of intraocular pressure in eyes of patients with primary open angle glaucoma where IOP remains uncontrollable while on maximum tolerated medical therapy and/or where glaucoma progression warrants surgery. In other words, if your medication is not successfully reducing the intra-ocular pressure, or if your doctor determines surgery is needed to better address the pressure, the MicroShunt provides an option.

The intended target patient population is *adult who are 18 years of age or older.* The surgeon who will perform your procedure will decide if the MicroShunt should be used.

o Contraindications

"Contraindications" are conditions which are stated in the Instructions for Use, guiding where or when the MicroShunt should not be used. The presence of these conditions can cause the MicroShunt to not perform in the way it's intended to perform.

The MicroShunt should not be used where the following types of conditions are present:

- Angle Closure Glaucoma.
- presence of conjunctival scarring
- previous incisional ophthalmic surgery involving the conjunctiva or other conjunctival pathologies (e.g., thin conjunctiva, pterygium) in the target quadrant
- active iris neovascularization
- active inflammation (e.g., blepharitis, conjunctivitis, scleritis, keratitis, uveitis)
- vitreous in the anterior chamber
- presence of an anterior chamber intraocular lens (ACIOL)
- intraocular silicone oil

3 Device Description

o Description of the Device

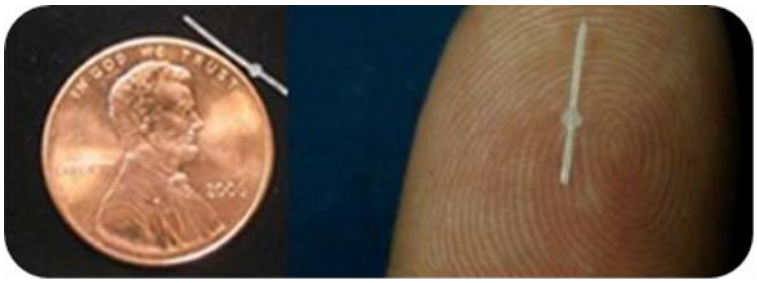
First, glaucoma is a disease that causes damage to the optic nerve which is located in the back of your eye. There are many types of glaucoma. The most common type is called *primary open angle glaucoma*. The MicroShunt is specifically intended for patients with primary open angle glaucoma.

The MicroShunt is what is commonly referred to as an aqueous shunt. Specifically, the MicroShunt is a small tube that is implanted into an eye that requires treatment for glaucoma. The shunt creates an escape path for excess fluid, called *aqueous humor*, from inside the eye, allowing the fluid to safely drain into a small area called a "bleb", which is located toward the outside of the eye.

This movement of the aqueous humor relieves the intra-ocular pressure in the eye, and can thereby slow down progression of the glaucoma, and further damage to the optic nerve.

The MicroShunt is designed to stay in the eye permanently, to continue to drain fluid away from the eye.

The MicroShunt is very small, about the size of a thick eyelash. It has "wings" attached along its sides to help keep it from moving following implantation. The MicroShunt is packaged with a special stainless-steel marker ("scleral marker") which is used to help your surgeon mark the proper implant location. You can see the size of the MicroShunt in the illustration below. Note the small "wings" attached to the sides of the MicroShunt. A picture of the scleral marker (3mm or 4mm) is also shown further below, with a description of its use below the picture.



Enlarged view of the "tube" [PRESERFLO MicroShunt]

3mm Scleral Marker

4mm Scleral Marker

The surgeon uses the scleral marker to mark the location on the eye where he will create a narrow tunnel, into which he'll place the MicroShunt. In simple terms, once implanted, the MicroShunt then provides a path for the aqueous fluid to drain from the high-pressure area of the eye to another area where the pressure is lower and doesn't affect the optic nerve. By allowing the aqueous humor to move away from the anterior chamber of the eye (inside of the eye), it is deposited in the alternate "bleb" area (outside of the eye) where it will ultimately be resorbed into the body.

During follow up visits, your doctor will check the pressure within your eye (intraocular pressure or "IOP"). From this, your physician can confirm that the MicroShunt is properly functioning. There may be times when the device may have to be repositioned, removed and/or replaced with another device if it is not working properly.

○ Material/Substances Contacting Patient Tissues

The materials that come in contact with the patient include the following:

- MicroShunt (permanent contact, implanted in eye)

A unique ultra-pure biomaterial called "SIBS" (styrene-block-isobutylene-block-styrene), designed specifically to be implanted and not to degrade in the body. "SIBS" is a material which has been used in implanted medical devices for over 20 years.

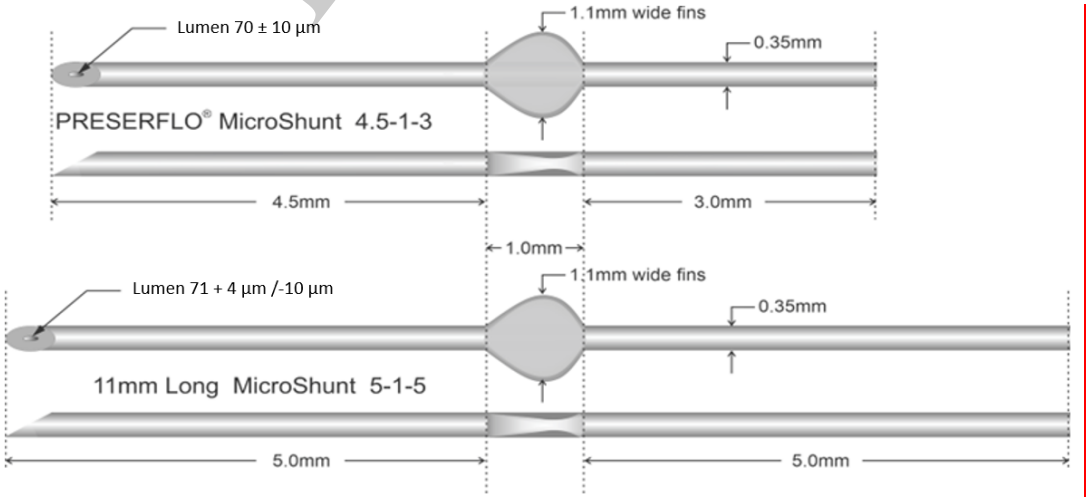
- Scleral Marker (brief contact with the white part of the eye), used to measure and locate the position for the MicroShunt implant, and incision. The scleral marker is made from stainless steel, grade 304L.

These materials are not known to present any additional risk to patients, such as cancer, mutation, reproduction problems, or disruption of hormones.

○ Information about the PRESERFLO™ MicroShunt Available Configurations

The PRESERFLO MicroShunt device is available in 2 length size configurations (8.5mm and 11mm). The two physical configurations of the PRESERFLO MicroShunt device are shown below. The lumen of the device is approximately 70 microns in diameter with an outer diameter of 350 microns and is designed to allow aqueous flow from the anterior chamber to a bleb (blister- like formation below the conjunctiva/Tenons) equivalent to the average flow from a healthy human eye of 2-3 microliters/minute at 5mmHg.

See below in Figures 3 for the PRESERFLO™ MicroShunt dimensions.



PRESERFLO™ MicroShunt

(All dimensions in mm)

The single-use, disposable 3-20mm or 4-20mm Marker (Scleral Marker) accessory (shown above) is designed to create a mark on the sclera 3mm or 4mm (depending on the PRESERFLO MicroShunt beingc configuration being implanted GLT-001 or GLT-001L) from the limbus to identify the starting location for the creation of the scleral track into the anterior chamber.

- **Information about Medicinal Substances in the Device, if any**

  The MicroShunt does not contain any medicinal substances.

- ***Intended Mode of Action***

  The MicroShunt "tube" is placed into the eye and drains fluid from one area of the eye into another area of the eye. This decreases the pressure within the eye (the "intra-ocular pressure or "IOP").

- **Accessories Intended to be Used in Combination**

No accessories are needed in combination with the MicroShunt device. Your doctor will use standard surgical instruments to perform the implantation procedure.

- **Other Devices/Products intended to be used in combination (if applicable)**

  The MicroShunt is distributed as a standalone device or may be distributed in "procedure pack" configurations. In addition to the standard devices commonly used in ocular surgeries, recommended accessories for the surgical procedure associated with the MicroShunt implantation include the following:

  a. Marker Pen – Gentian Violet (1)

  b. Anterior Chamber Cannula 23G 8mm bend (1)

  c. MANI Ophthalmic Knife Slit-Angled 1.0mm Knife (1)

  or

  Ophthalmic Knife Double Step-Angled 1.0mm Knife (1)

  d. Sponges (3) and

  e. Sclera Track Needle 25g x 5/8 (25G Needle) (1)

4 Risks and Warnings

A medical device manufacturer or provider is required to identify possible side effects and risks which the patient and surgeon should be aware of, along with warnings and precautions. You should contact your healthcare professional if you believe that you are experiencing side effects related to the device, with its use, or if you are concerned about risks. The explanations in this document are not intended to replace consultation with your doctor.

○ *Residual Risks and Undesirable Effects*

Some undesirable effects may occur following the surgical procedure and the implantation of the MicroShunt. Below in Table 8 is a brief listing of effects which you may experience after surgery. You should speak with your physician if you experience any of these effects or have concerns.

Table 8 Residual Risks and Undesirable Effects

Residual Risks and Undesirable Effects	What does this mean?	How often might this occur?
Glaucoma progression not controlled	Glaucoma is a chronic disease and often progresses, despite the fact that an implanted drainage device is in place and is functioning as intended. The MicroShunt helps to restore patient IOP to a range which slows disease progression, while reducing the need for glaucoma medications.	Data reported in five clinical investigations showed IOP reductions from "baseline", of 20% or more, in 51% to 96% of patients enrolled, the numbers reflecting the various investigation results.
Increase in cup-to-disc ratio (C/D)	Cup to disc ratio is a measurement use by clinicians to determine if there may be a problem in the eye, and the ratio is used when looking at the progression of glaucoma. The normal ratio is in the 0.5 range. Above that value indicates a progression of glaucoma.	Increase in the cup to disc ratio is rarely reported; less than 2 in 10,000 reported cases with the MicroShunt. You can ask your doctor about the cup to disc ratio and its relevance to your situation.
Anesthesia related complications	Anesthesia related complications are events which are associated with the administration of anesthesia at the beginning of a surgical procedure. Your doctor decides what type of anesthesia will be used during implantation of the MicroShunt.	Anesthesia related complications have been rarely reported in conjunction with MicroShunt surgery, at a rate of less than 1 in 10,000 cases, based on clinical data.
Difficulty in inserting the MicroShunt or failure to implant the device	The MicroShunt is very small, about the size of an eye lash. The surgery, while intricate in nature, seldom presents difficulties to the surgeon. If the surgeon encounters any initial difficulty during surgery, it is normally a temporary event which is resolved when it occurs.	Difficulties inserting the MicroShunt are fairly unusual, having been reported in less than 1 in 1000 cases, based on clinical data.

Device malfunction	Device malfunction, while a broad description, typically relates to the device not working as intended. Your surgeon confirms the MicroShunt is working prior to completing the procedure. He then monitors IOP during postoperative visits and confirms the implant continues to function.	MicroShunt malfunctions seldom occur, with a rate of approximately 2 in 1000 cases, based on clinical data.
Device repositioning	Device repositioning is sometimes needed with all glaucoma drainage implants. Your doctor assesses the performance of the device at your regular visits, and would determine if minor repositioning is needed.	The need for repositioning the MicroShunt is an infrequent event, occurring in approximately 3 in 10,000 cases, based on clinical data.
Extended surgical procedure	An extended surgical procedure is a potential event associated with any surgical procedure. The implantation of the MicroShunt is a straightforward procedure, supported by training of physicians prior to the use of the device. The implantation of the MicroShunt is a fairly short procedure, which you can discuss with your doctor.	Difficulties which would result in an extended surgical procedure are very unusual, and occur at a rate of less than 1 in 10,000 cases, based on clinical data.
Tube migration out of anterior chamber	Migration, or slight movement of the device, can potentially occur with any implantable glaucoma drainage device. Migration is very unusual and can occur at any time. If migration does occur it is resolved either through repositioning the device, or in rare cases by MicroShunt replacement.	As discussed above, relating to device repositioning, this is a very unusual occurrence, with less than 3 in 10,000 cases, based on clinical data.
Flat anterior chamber	Flat anterior chamber can occur with any glaucoma drainage device and is related to an elevated flow of aqueous fluid out of the anterior chamber. This is an infrequent occurrence and is monitored by your doctor.	A flat anterior chamber is observed to rarely occur, at a rate of 4 in 10,000 cases, based on clinical data.

Shallow anterior chamber	Shallow anterior chamber reflects a low IOP which indicates excessive movement of aqueous fluid away from the anterior chamber. This can be treated by your doctor and is monitored post-surgery for all glaucoma drainage devices.	Shallow anterior chamber is reported at a low rate, with 2 in 1,000 cases, based on clinical data.
Excessive bleeding in anterior chamber, or incision site, or eye	Bleeding is a byproduct of the implantation procedure. Excessive bleeding is a rare event for glaucoma drainage device implantation procedures.	Excessive bleeding is highly unusual, occurring at a rate of less than 1 in 10,000 cases, based on clinical data.
MicroShunt touches cornea or iris	The MicroShunt touching the cornea or iris are potential adverse events which are procedure related. Surgeons undergo training prior to performing the procedure.	Reports of the MicroShunt touching the cornea or the iris are unusual, occurring in less than 1 in 1000 clinical investigation cases. For commercially marketed devices the incidence of occurrence is much lower, at 1 in 10,000 cases.
Intraocular pressure too high	High intraocular pressure or IOP requires ongoing monitoring both prior to and after device implant surgery. Monitoring allows your doctor to provide prompt and effective therapy, which is why monitoring is so important. Elevated IOP can occur for several reasons, including disease progression or the presence of biological materials which can slow or inhibit the performance of the implant. High IOP can be treated in several ways. Causes and treatment should be discussed with your doctor.	Clinical investigation data shows that increased IOP, requiring some level of treatment, is a common occurrence in post-operative monitoring. Over the term of patient care from implantation through post-operative monitoring, a high IOP event was reported in half of the patient cases as part of monitoring and post-surgical follow-up.
Strabismus	Strabismus, also known as hypertropia, or crossed eyes is an uncommon event associated with glaucoma drainage devices.	Strabismus is reported to occur in less than 1 in 10,000 cases, based on clinical data.
Choroidal effusion or hemorrhage	Choroidal effusion, detachment or hemorrhage events are potential events which could occur with all glaucoma drainage implants. When they do occur, they may “self-resolve”, and are treatable.	Occurrence of these events is infrequent, with less than 3 in 1000 cases based on clinical data.

		Complaint rate data shows a lower occurrence rate of less than 4 in 10,000 cases.
Retinal complications (retinal detachment, proliferative retinopathy)	Retinal complications are potential events which can occur with any glaucoma drainage device.	Reported occurrences are very unusual, with 2 in 10,000 cases based on clinical data.
Hyphema (microhyphema)	Both hyphema (collection of blood in the anterior chamber of the eye) and microhyphema (red blood cells in the anterior chamber that don't form into a clot) are possible side effects of any glaucoma drainage device implant surgery, and they may or may not require treatment.	Hyphema is an infrequently reported occurrence with less than 4 in 1000 cases, based on clinical data.
Hypotony or hypotony maculopathy	Hypotony and hypotony maculopathy events (transient or persistent) are characterized by low IOP and can occur with all glaucoma drainage devices. Hypotony maculopathy is characterized by low IOP combined with other associated abnormalities in the interior part of the eye.	Hypotony related events have been reported at a rate of less than 6 in 1000 cases, based on clinical data.
Phthisis bulbi	Phthisis bulbi is also known as "end stage eye" and is characterized by severe eye damage. This is not associated with the device and is rarely reported in discussions about glaucoma related devices.	Rare occurrence, reported in less than 1 in 10,000 cases, based on clinical data.
Endophthalmitis	Endophthalmitis is an infection of the tissues or fluids in the eye which can occur from any eye surgery, or from other sources of damage to the eye. It requires immediate treatment.	This is a very unusual occurrence, less than 2 in 10,000 cases, based on clinical data.
Tube erosion through conjunctiva	Erosion of the device through the conjunctiva (membrane covering the front of the eye) is a potential risk associated with any glaucoma drainage device and is typically related to the implantation procedure.	Tube erosion through the conjunctiva is an unusual event, with occurrence of less than 5 in 10,000 cases, based on clinical data.

	With regard to the MicroShunt, the erosion would be generally attributable to one of two basic issues: the scleral pocket for inserting the MicroShunt is not wide enough, or the MicroShunt fins have not been seated properly in the scleral pocket, where the patient has a thin conjunctiva.	
Tube obstruction, partial or complete (blocked by iris or vitreous or fibrin or debris)	Tube obstruction, partial or complete (blocked by iris, vitreous, fibrin or debris) is a potential event associated with any glaucoma drainage device. Obstruction can slow or it can stop aqueous flow, which in turn affects IOP. Obstruction can be caused by damage to the MicroShunt or is typically caused by the presence of flow impeding debris which can clog the MicroShunt. Your doctor assesses the possibility of blockage or flow related issues when monitoring IOP as part of regularly scheduled visits.	Rare occurrence, reported in less than 3 in 10,000 cases, based on clinical data.
Uveitis	Uveitis, which is an inflammation of the uvea, is a potential adverse event associated with glaucoma drainage devices. The inflammation occurs inside the eye. There are many causes for Uveitis, including infection, injury, and autoimmune disease. If you encounter eye redness, pain and blurred vision you should consult with your doctor immediately.	There have been no reported Uveitis cases involving the MicroShunt or MicroShunt patients, thus a rare occurrence at less than 1 in 10,000.
Iritis	Iritis is a swelling and irritation (inflammation) of the iris. There are many possible causes for iritis, which can be discussed with your doctor.	Iritis is rarely reported in conjunction with glaucoma implant devices, with less than 3 in 10,000 cases, based on clinical data.
Diplopia	Diplopia (double vision) is not uncommon and may exist prior to or following eye surgery. Typically, it's a temporary event.	Diplopia occurs infrequently, reported in 1 in 1000 cases, based on clinical data.

Aqueous misdirection or malignant glaucoma	Aqueous misdirection, also referred to as malignant glaucoma, is rare but is one of the most serious complications of glaucoma filtration surgery. This is not typically associated with the MicroShunt since its observed in patients with closed angle glaucoma.	For MicroShunt patients, the occurrence is very low, less than 2 in 10,000 patients, based on clinical data. Note that the incidence of occurrence is higher among closed angle glaucoma patients.
Corneal complications (abrasion, edema, ulceration, infection, decompensation, bullous keratopathy, endothelial cell loss, Descemet striae, keratitis)	Corneal complications are a grouping of nine potential events associated with all glaucoma drainage devices. The severity of these events can range from abrasion to endothelial cell loss, and the frequency of occurrence varies. Any questions can be discussed with your doctor.	Corneal complications occur at a low rate of 4 in 1000 cases, based on clinical data.
Partial or complete vision loss	The potential for vision to be temporarily or even permanently negatively impacted is a recognized risk associated with all glaucoma drainage devices. Vision deterioration and loss can be attributed to disease progression, as measured via the “BCVA” test (best corrected vision acuity). A reduction in IOP slows disease progression and delays further vision loss.	Vision loss or some degree of impact to acuity is reported to occur at a rate of 2 in 1000 cases, based on clinical data.
Blurry vision	Blurry vision is potential adverse event associated with all glaucoma drainage device surgery. Also termed as “reduced visual acuity”, blurry vision can occur immediately post op, or it can occur over time. Causes can be non-device related. If you experience blurry vision you should speak with your doctor.	Blurry vision has been reported at a low rate of occurrence, less than 2 in 1000 cases, based on clinical data.

Bleb related complications (includes bleb leak, cystic or encapsulated bleb, blebitis, and bleb failure).	Bleb related events are common events associated with implantation of all glaucoma drainage devices.	The rate of occurrence for bleb related complications with the MicroShunt is low, less than 5 in 1000 cases, based on clinical data.
Pupillary block	Pupillary block is the most common mechanism leading to acute angle-closure glaucoma. It occurs when the flow of aqueous humor from the posterior chamber of the eye to the anterior chamber is obstructed or sealed off. This is not typically associated with implantation of the MicroShunt.	Pupillary block is not reported as a device related event. The presence of pupillary block however should be addressed by your doctor.
Ptosis	Ptosis (drooping of the upper eyelid) is a potential event which can be associated with glaucoma drainage devices, though there are other causes. Resolution typically involves some level of surgical intervention. You should discuss this with your doctor if it develops.	Ptosis id not uncommon, though infrequently reported, less than 2 in 1000 cases, based on clinical data.
Macular Edema	Macular edema is a buildup of fluid and swelling in the macula (center part of the retina). Macular edema can distort your vision, making things look blurry and causing colors to look “washed out”. The most common cause of macula edema is disease related (diabetic retinopathy). It can also develop as a complication after any type of surgery within the eye, including surgery for cataracts, glaucoma, or retinal disease.	Macular edema in MicroShunt patients has a very low observed rate of occurrence, 4 in 10,000 cases, based on clinical data.
Prolonged inflammation	Prolonged inflammation is *inflammation with a duration and dosage in excess of the standard post operative instructions.*	Prolonged inflammation has been rarely reported in association with the MicroShunt, with an occurrence of less than 3 in 10,000 cases, based on clinical data.
Use of glaucoma medications	The MicroShunt is intended for glaucoma patients who are on	Clinical trial data, and literature report that the MicroShunt helped

	maximum tolerated medication, and who have uncontrolled IOP. Following a successful implantation of the MicroShunt, the use of glaucoma medication may be reduced or eliminated.	restore patients' IOP to a normal range which resulted in eliminating or reducing the need for glaucoma medication.
Ocular pain	Ocular pain is a potential event associated with the invasive nature of any ocular implantation procedure.	Ocular pain has been reported at a rate of less than 2 in 1000 cases, based on clinical data.
Conjunctival complications (buttonhole dehiscence, dissection, hemorrhage, hyperemia, scar, tear, ulceration)	Conjunctival complications are a grouping of eight types of adverse events which involve the conjunctiva, associated with glaucoma surgery.	For all conjunctival complications combined, the rate of occurrence is less than 2 in 1000, based on clinical data.
Iris adhesions, synechiae or iris abrasions	Iris adhesions, synechiae, or iris abrasions are potential adverse events which can be associated with trauma resulting from the implantation procedure but are also generally associated with existing inflammation.	Iris adhesions, synechiae or iris abrasions are infrequent occurrences at less than 1 in 1000 cases, based on clinical data.
Cataract development or progression	Cataract development or progression are events which are independent of the device implant.	Though unrelated to the MicroShunt implant, cataracts were reported to exist with MicroShunt patients, at a rate of 3 in 1000 patients.
Posterior capsule opacity	Posterior capsule opacity is the formation of scar tissue behind a lens implant. This is not attributable to the MicroShunt or the implantation procedure.	The rate of posterior capsule opacity was observed in less than 4 in 10,000 cases, based on clinical data.
Explantation of the MicroShunt	Explantation is the removal of an implanted device. Removal of the MicroShunt, or any device, is a known potential adverse event associated with all glaucoma drainage devices. Removal can occur for many reasons including if IOP remains too high, or if the device opening is believed to be obstructed by biological debris. Typically, a new device is then implanted.	Explantation, or removal, of the MicroShunt is a remote occurrence (less than 3 in 1000) based on all data sources.

Foreign body sensation	Foreign body sensation, *the feeling of something in the eye*, is a potential adverse event associated with the implantation of all glaucoma drainage devices.	Foreign body sensation has been reported in conjunction with the MicroShunt implant at a rate of 1 in 1000 cases, based on clinical data.
Fibrin in anterior chamber	Fibrin formation, both as a result of surgery and post-surgery, is a potential adverse event associated with all glaucoma surgery devices and procedures. The MicroShunt does not cause the formation of fibrin, but it can be affected by its presence, as fibrin can slow or obstruct flow through the MicroShunt.	Fibrin in the anterior chamber, resulting in an adverse event is rare, with an occurrence rate of less than 1 in 10,000 cases, based on clinical data.
Visual field damage	Visual field damage can occur as a result of a broad number of factors, including disease, medication, heredity, and inflammation. Visual field damage not been directly associated with MicroShunt implantation surgery as a cause. If you experience blurry vision or have difficulty seeing objects in front of you, discuss this with your doctor.	Visual field damage has been observed at a low occurrence rate, less than 3 in 1000 cases, based on clinical data.
Unplanned glaucoma-related surgical (re) intervention	An unplanned *glaucoma related* surgical intervention, or a re-intervention, can occur when your doctor determines the need to surgically re-treat the eye, because glaucoma related issues have worsened.	Unplanned glaucoma related surgical interventions or re-interventions are not a frequent occurrence, being reported in less than 1 in 1000 MicroShunt patients.
Optic disc hemorrhage	Optic disc hemorrhage is a common clinical occurrence of glaucoma, indicating an active disease with likely progression and visual field loss. If you notice any irregularities with your vision you should speak with your doctor.	Optic disk hemorrhage occurrences with MicroShunt patients have been observed in less than 4 of 10,000 cases, based on clinical data.

Globe perforation	A globe perforation (rupture) during implantation or anesthesia is a rare event.	Globe perforation is a rare occurrence observed in less than 1 in 10,000 cases, based on clinical data.
Headache	Headaches were monitored as part of clinical trials for the MicroShunt. Persistent or chronic headaches are not commonly associated with MicroShunt implantation.	Headaches have been rarely reported in association with the MicroShunt implant, at an occurrence rate of 3 in 10,000 cases, based on clinical data.
Vitreous hemorrhage	Vitreous hemorrhage is bleeding into the vitreous gel at the back part of the eye. Vitreous hemorrhage occurrences have not been attributed to implantation of a MicroShunt. If vitreous hemorrhaging occurs, it frequently self-resolves.	Vitreous hemorrhages have been rarely observed in conjunction with the MicroShunt, less than 2 in 10,000 cases, based on clinical data.
Wound leak	Wound leaks have also been discussed under other categorizations such as conjunctival complications and bleb leaks. A wound leak is viewed as a short-term event related to suturing at the wound site. This indicates a procedure related event.	Wound leaks have been rarely reported, occurring at a rate of 5 in 10,000 cases, based on clinical data.
Suture related complications	Suture related complications are a potential adverse event associated with any surgical procedure where sutures are used. Also reported as “suture removal”, “exposed suture”, “suture allergies”, “suture bleeding”, and “suture abscess”. A total of 10 events were reported.	Suture related complications are a rare event, less than 3 in 10,000 cases, based on clinical data.

- ***Warnings and Precautions***

  In order to avoid or minimize risks a medical device manufacturer lists warnings and precautions in their *Instructions for Use* (IFU) document. Below are two precautions which are provided in the IFU, which relate to the patient.

Table 9 Precautions that Relate to the Patient

Precautions	Details for the Patient
The safety and effectiveness of the MicroShunt has not been established in patients with chronic eye inflammation.	Let your doctor know if you've had a history of chronic eye inflammation, or any prior eye inflammation issues.
The patient's IOP should be monitored postoperatively. If IOP is not adequately maintained after surgery, appropriate additional therapy to maintain IOP should be considered.	It is important that you follow up with your doctor at his/her recommended intervals throughout the lifetime of the MicroShunt implant. If you feel any eye discomfort, or difficulty with your vision, you should tell your doctor.

- ***Control/Management of Potential Risks***

  All surgical procedures and medical devices have potential risks that may result in "complications." A complication is a secondary issue which may arise from treatment or surgery. Complications can range from minor annoyances or irritations to critical complications which can be sight threatening. You should discuss potential complications with your doctor, along with what actions you should take in the event of an emergency situation.

- ***Summary of any Field Safety Corrective Action***

  There have been no Field Safety Corrective Actions associated with the product.

5 Summary of Clinical Evaluation and Post-Market Clinical Follow-Up

- ***Clinical Background of the Device***

  The MicroShunt received its CE marking in 2012. The MicroShunt has a proven clinical track record of safety and performance.

- ***The Clinical Evidence for CE-marking***

  The safety and performance profile of the MicroShunt is backed by clinical investigational testing, testing to international standards, and years of clinical use data, all supporting safety and performance.

Supporting data comes from clinical studies, published literature, and user experience including user feedback as well as customer complaints. Clinical investigations were still underway at the time of CE marking.

There are currently 20 articles published in the literature between January 2012 and December 31, 2021. Both retrospective and prospective studies, and individual case reports document the use of the MicroShunt in patients. No unacceptable risk has been identified in the articles.

- ***Safety***

  The clinical evaluation conducted by InnFocus reviews all clinical data related to the MicroShunt. This includes complaints, field safety corrective actions (actions such as relabeling or device modification that helps to reduce the risk of harm), recalls, and studies that have been conducted by InnFocus, or reported by others in the published literature.

  Complaints may be submitted by doctors that use the device (users) or may be observed in the published literature. Currently, the complaint rate for the MicroShunt, as measured against units released to the market is very low, at 0.52 %, or slightly more than 4 complaints per 1000 devices implanted. including This includes complaints for any reason, including complaints with no patient impact.

  To date, there have been four clinical investigations conducted by InnFocus. The device data used to compile this Summary comes from the four clinical investigations, device data published in clinical literature, and user experience with the device.

  The data from the clinical investigations conducted, from reported complaints and reviewed literature have been compared against published literature and data reporting for similar devices. This literature represents the *State of the Art*. Complications, complaints, and performance metrics seen with the MicroShunt were compared with the information reported from similar devices (i.e., *State of the Art*). The comparison demonstrated that incidence of safety and performance metrics for the MicroShunt are within an acceptable range (within the parameters identified with *State of the Art*). This shows acceptable safety and performance, and consistency with the current *State of the Art.*

  The types of complications seen with the MicroShunt are consistent with the types of risks reported for all glaucoma drainage devices. The risks must be weighed against the benefit of using the drainage devices. Uncontrolled *Primary Open Angle Glaucoma*, the underlying disease associated with the use of the MicroShunt, presents unacceptable risks if not treated. Left untreated, the patient may experience vision loss which may lead to irreversible blindness.

  Options exist for treating glaucoma where IOP remains uncontrolled and/or where the disease progresses, such as traditional surgery. Your doctor may first prescribe medication or laser surgery in early or moderately advanced stages of the disease.

However, as glaucoma progresses, more extensive surgery and treatment may be needed.

In evaluating the risks and benefits of treatment with the MicroShunt to the alternatives, the benefits of using this device outweigh the potential risks.

A post-market clinical follow-up plan is in place to continually monitor the MicroShunt's performance as part of post-market surveillance. These activities include five years of patient follow up from clinical investigations, user feedback and customer complaints, published literature, and field safety corrective actions. The plan also includes continued data collection to obtain additional long-term safety and performance data in a group of clinical study patients that received the MicroShunt ten or more years ago.

6 Diagnostic or Therapeutic Alternatives

When considering alternative treatments, it is recommended to contact your healthcare professional who can evaluate your individual situation.

7 Harmonized Standards and Common Specifications

Below in Table 9 is a listing of the pertinent standards associated with the MicroShunt.

Table 9 Harmonized Standards and Common Specifications

Standard / Regulation/Guidelines	Description
ANSI Z80.27-2014 (R2019)	American National Standard for Ophthalmics - Implantable Glaucoma Devices
ASTM D4169 – 23E1	Standard Practice for Performance Testing of Shipping Containers and Systems
ASTM F88/F88M 2023	Standard Test Method for Seal Strength of Flexible Barrier Materials
ASTM F1608 –21	Standard Test Method for Microbial Ranking of Porous Packaging Materials (Exposure Chamber Method)
ASTM F1886/ F1886M -16	Standard Test Method for Determining Integrity of Seals for Flexible Packaging by Visual Inspection
ASTM F1980-21	Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices
DIN EN ISO 20417	Information supplied by the manufacturer with medical devices
BS EN 62366-1:2015+A1:2020	Medical devices-Application of usability engineering to medical devices
EN ISO 10993-3:2014	Biological evaluation of medical devices – Part 3: Tests for genotoxicity, carcinogenicity, and reproductive function
EN ISO 10993-5:2009	Biological evaluation of medical devices – Part 5 Tests for in vitro cytotoxicity

Standard / Regulation/Guidelines	Description
ISO 10993-13:2010	Biological evaluation of medical devices - Part 13: Identification and quantification of degradation products from polymeric medical devices
EN ISO 11737-1:2018/A12021	Sterilization of health care products - Microbiological methods - Part 1: Determination of a population of microorganisms on products
EN ISO 11737-2: 2020	Sterilization of health care products. Microbiological methods-Part 2: Tests of sterility performed in the definition, validation and maintenance of a sterilization process
EN ISO 13485:2016/A11:2021	Medical devices - Quality management systems - Requirements for regulatory purposes
EN ISO 14155:2020	Clinical investigation of medical devices for human subjects - Good clinical practice
EN ISO 14971:2019/A11:2021	Medical Devices - Application of risk management to medical devices
EN ISO 15223-1:2021	Medical devices - Symbols to be used with information to be supplied by the manufacturer - Part 1: General requirements
ISO 10993-1:2018	Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process
ISO 10993-6:2016	Biological evaluation of medical devices — Part 6: Tests for local effects after implantation
ISO 10993-7:2008/AMD 1:2019	Biological evaluation of medical devices — Part 7: Ethylene oxide sterilization residuals — Amendment 1: Applicability of allowable limits for neonates and infants
ISO 10993-7:2008/COR 1:2009	Biological evaluation of medical devices — Part 7: Ethylene oxide sterilization residuals — Technical Corrigendum 1
ISO 10993-9:2019	Biological evaluation of medical devices — Part 9: Framework for identification and quantification of potential degradation products
ISO 10993-10:2021	Biological evaluation of medical devices – Part 10: Tests for irritation and skin sensitization
ISO 10993-11:2017	Biological evaluation of medical devices – Part 11: Tests for systemic toxicity
ISO 10993-12:2021	Biological evaluation of medical devices – Part 12: Sample preparation and reference materials
ISO 11135:2014	Sterilization of health-care products — Ethylene oxide — Requirements for the development, validation and routine control of a sterilization process for medical devices
ISO 11607-1:2019	Packaging for terminally sterilized medical devices — Part 1: Requirements for materials, sterile barrier systems and packaging systems
ISO 11607-2:2019	Packaging for terminally sterilized medical devices — Part 2: Validation requirements for forming, sealing and assembly processes
ISO 11979-5:2020	Ophthalmic Implants – Intraocular Lenses Part 5: Biocompatibility.
ISO 11979-6:2014	Ophthalmic implants - Intraocular lenses - Part 6: Shelf-life and transport stability testing
ISO 14630:2024	Non-active surgical implants – General requirements
MDCG 2019-9	Summary of safety and clinical performance A guide for manufacturers and notified bodies

8 SSCP Revision History

Table 10 Revision History

SSCP Revision Number	Date Issued	Change description	Revision validated by the Notified Body
1	12/8/2023	Initial release	☒Yes Validation language: English ☐ No
2	08/20/2024	SSCP- EUMDR Technical File Update 2024	☐ Yes Validation language: English ☒ No
3	11/18/2024	SSCP- Patient Information Expansion for EUMDR Technical File Review 2024	☐ Yes Validation language: English ☒ No

Table 11 Revision Status

REV	ECN NUMBER	DESCRIPTION
1	MD-FRM-02710	New release of Summary of Safety and Clincal Performance
2	MD-FRM-03648	SSCP- EUMDR Technical File Update 2024 Revision Implemented

REV	ECN NUMBER	DESCRIPTION
3	MD-FRM-03798	SSCP- Patient Information Expansion for EUMDR Technical File Review 2024 Revision Implemented

Document Approvals

Approved Date: 11/22/2024

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