

# Injection Device for Eye Disease

---

## A device for easier delivery of therapeutic agents to the subconjunctival space of the eye

Inventors at Georgia Tech have developed a device for delivering therapeutic agents to the subconjunctival space of the eye. The device is comprised of a needle, a therapeutic agent containing syringe, a single button, and a mechanical encasement. Drugs delivered to the subconjunctival space act as a depot for sustained-release. In one embodiment of the device, the mechanical encasement is non-actuating and uses suction to elevate the conjunctiva to a stationary needle and syringe. All embodiments of this device are disposable or semi-disposable.

### Summary Bullets

- **Safer:** Simplifies delivery and lowers the risk of complications
- **Easier:** Device can be operated by a non-surgically trained individual using only a single hand
- **Increased Bio-availability:** Less drug needed due to injection efficiency

### Solution Advantages

- **Safer:** Simplifies delivery and lowers the risk of complications
- **Easier:** Device can be operated by a non-surgically trained individual using only a single hand
- **Increased Bio-availability:** Less drug needed due to injection efficiency

### Potential Commercial Applications

- Subconjunctival injections
- Subconjunctival delivery of sustained-release glaucoma therapeutics

### Background and More Information

Existing therapeutic agents are regularly delivered to the subconjunctival space of the eye, which requires a practitioner who is surgically trained. Further, a new class of sustained-release agents are being developed to treat glaucoma and will be deployed into the subconjunctival space. Glaucoma is the second most common cause of blindness, estimated to affect nearly 80 million people by 2020. Glaucoma has no cure, and all treatments seek to lower IOP (intraocular pressure) to slow or halt vision loss from the disease. Eye drops are currently the

most used therapy, but users suffer from multiple drawbacks such as difficulty when self-administering and non-compliance. Adoption of a new sustained- release subconjunctival drug formulations will require a device for safe and easy injection for use in community ophthalmology and optometry offices.

## **Inventors**

- Dr. Ross Ethier  
Georgia Research Alliance Lawrence L. Gellerstedt, Jr. Eminent Scholar in Bioengineering Professor – Georgia Tech Department of Biomedical Engineering
- Dr. R. Allingham  
Former Professor Emeritus and Chief of Glaucoma – Duke Eye Center
- Jordan Rehwaldt  
Graduate Research Assistant – Georgia Tech Department of Biomedical Engineering

## **IP Status**

:

## **Publications**

, -

## **Images**

Visit the Technology here:

[Injection Device for Eye Disease](#)

---

<https://s3.sandbox.research.gatech.edu//index.php/print/pdf/node/3778>