

# Product Design Specifications

**Title:** Device for administration of intra-ocular injections

**Function:** Develop a syringe that allows for a safe and efficient means of injecting medication into the vitreous cavity of the eye.

**Client requirements:**

- Allow for thumb and forefingers to be close contact to the tip of syringe
- Inject medication at a slow and steady rate
- Allow user to stop injection during procedure
- Roughly the same size as the existing syringe
- External and detachable from the existing syringe to allow for multiple uses without contamination

**Design requirements**

**1. Physical and Operational Characteristics**

a. *Performance requirements:* Attach to existing syringe and deliver medication at a slow and steady rate while the needle is being held in the eye.

b. *Safety:* Must not affect the doctors ability to hold the syringe steady while injecting medicine.

c. *Accuracy and Reliability:* Inject medicine at a slow, steady rate. Device should also allow user to stop injection at any time.

d. *Life in Service:* Multiple uses, not specified by client.

e. *Shelf Life:* N/A

f. *Operating Environment:* Normal medical clinic conditions.

g. *Ergonomics:* Device should be easy to use and require the use of only one hand.

- h. *Size*: Attach to existing syringe, fitting easily in the palm of average hand.
- i. *Weight*: Very light (less than one pound)
- j. *Materials*: Materials should be non-hazardous
- k. *Aesthetics, Appearance, and Finish*: Should be professional looking

## **2. Production Characteristics**

- a. *Quantity*: One (prototype)
- b. *Target Product Cost*: \$200 – 300 for a reusable device

## **3. Miscellaneous**

- a. *Standards and Specifications*: Needs to be certified as safe to use in clinical settings
- b. *Customer*: Ophthalmologists who give intra-ocular injections
- c. *Patient-related concerns*: Must allow doctor to use easily with one hand
- d. *Competition*: None known, but currently searching patents