

Designing a Novel Tool for Corneal Foreign Body Removal

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Purpose: To describe the development process of a designated corneal foreign body removal tool, tailored to the corneal anatomy, injury mechanism and human ergonomics.

Methods: Following guidance from two ophthalmologists experienced in corneal foreign body removal, prototypes of different shapes and sizes were produced by Industrial design students at the Holon Institute of Technology employing Photochemical machining process (PCM).

Results: The produced tools were examined by the ophthalmologists using a model of a Styrofoam sheet attached to a slit lamp and a shortlist of tools were chosen for further refinement and development.

Conclusions: Cooperation between clinicians and designers resulted in a rapid and efficient development of a tool aimed at solving an unmet clinical need. PCM process is a promising technique for fast prototyping of ophthalmic tools.

1 - Designing a corneal foreign body removal tool, tailored to the corneal anatomy, injury mechanism and human ergonomics



2 - Examination of a shortlist of tools that were chosen for further refinement and development using a model of a Styrofoam sheet



3 – Embedding metal foreign bodies in Porcine eye model corneas and further refinement of the tools chosen

