

Introducing the Eye Posturo-Meter (EPM):

A New Device for Measuring Compliance with Posturing Advice Post-Vitrectomy and Determining Optimal Postoperative Strategies

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Background

Post-vitrectomy posturing advice remains debated due to a lack of consensus and challenges in objectively assessing patient adherence and comparing different protocols

Previous monitoring devices were impractical due to their bulky designs and excessive wiring. Reliance on nursing records and keeping patients hospitalized provided difficulty and limited observations. These limitations highlight the need for a user-friendly, effective compliance monitoring solution, which can also be used in controlled trials.

Description

The Eye Posturo-Meter (EPM), is an innovative user-friendly gadget devised to:

- Monitor and electronically record head and eye spatial orientation.
- Assess patient compliance with post-vitrectomy posture recommendations.
- Establish an objective basis for determining the optimal posturing protocol.
- Enable smartphone integration for real-time compliance alerts.

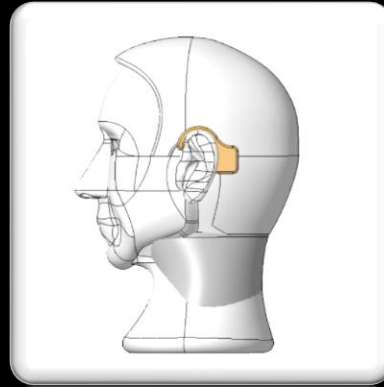


Figure 1: CAD model of the posturometer device on Patient

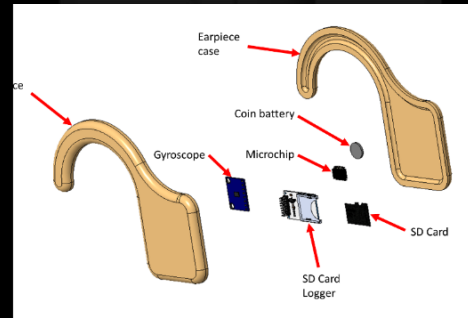


Figure 2: Exploded view of the proposed posturometer

Objectives

- Improve adherence to post-operative posture advice following pars plana vitrectomy.
- Facilitate research into the most effective posturing protocols for better surgical outcomes based on objective standards.
- Expand applications to broader ophthalmic monitoring, including corneal grafts and keratoconus-related posture studies.

Research Phases

1

Development and manufacturing:

Design and produce the EPM and get required formal approvals

2

Prospective Study

Conduct a prospective study to evaluate patient compliance with various posturing regimens post-vitrectomy using the EPM.

3

Randomized Controlled Trial

Perform a randomized trial to compare the efficacy of different posturing approaches in patients following macular hole surgery, utilizing the EPM for objective compliance monitoring.