



# A Review of Diagnostically Based Scleral Lenses

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## Introduction

- Scleral lenses (SL) have been effectively utilized in visual rehabilitation of irregular corneas (IC), therapeutic treatment of ocular surface disease (OSD), and the correction of refractive error.<sup>1</sup>
- Objective: To report characteristics and outcomes of patients fitted with diagnostically based SL.

## Methods

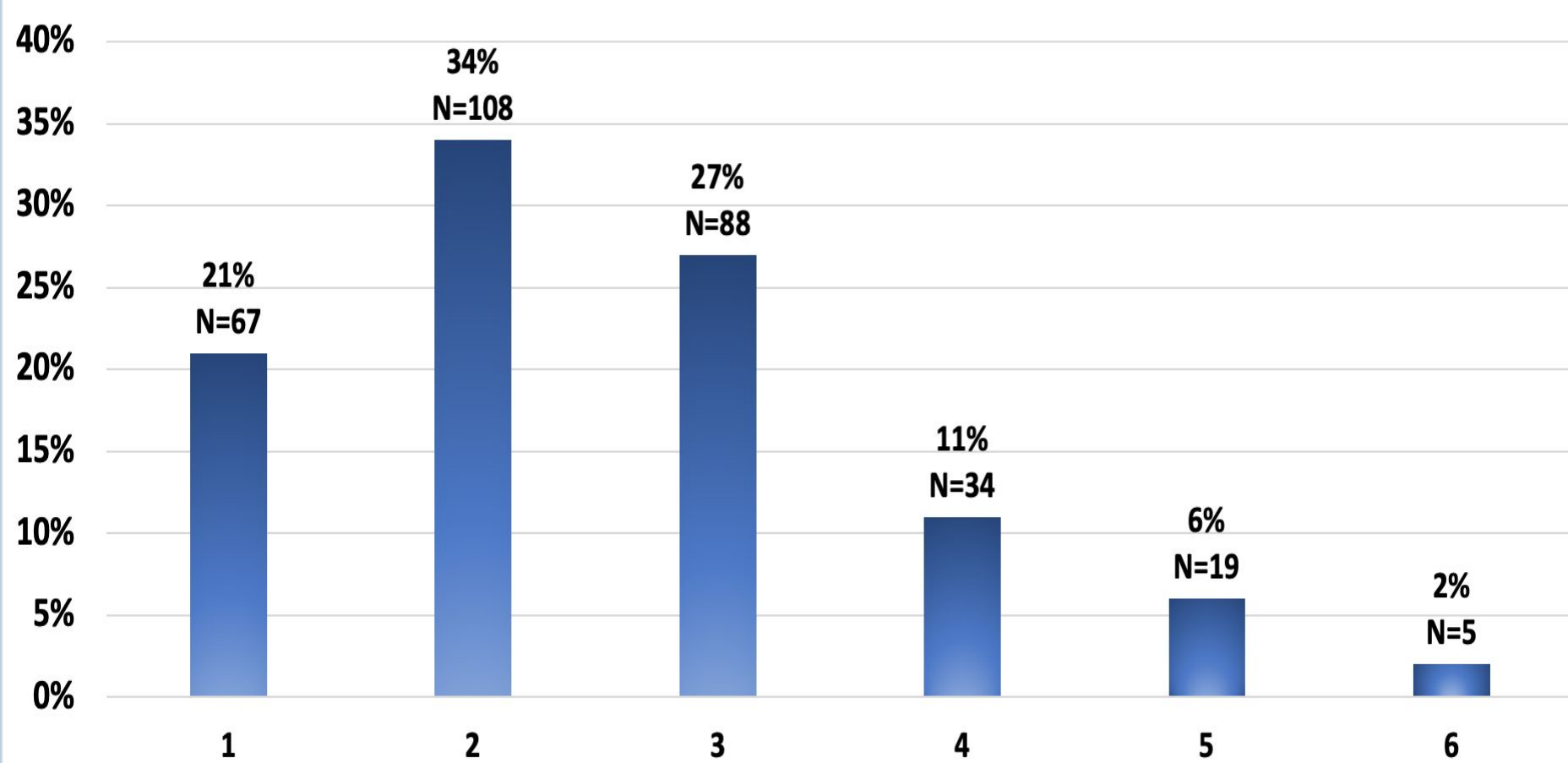
- A retrospective chart review of patients fit with diagnostically based SL.
- 418 eyes of 225 patients were included in the study.
- Of the 418 eyes fit, 412 eyes were fit primarily for IC and 6 for OSD.
- Principal outcomes measured: number of lenses required to finalize, number of remakes, indications for remakes, and reasons for failure.



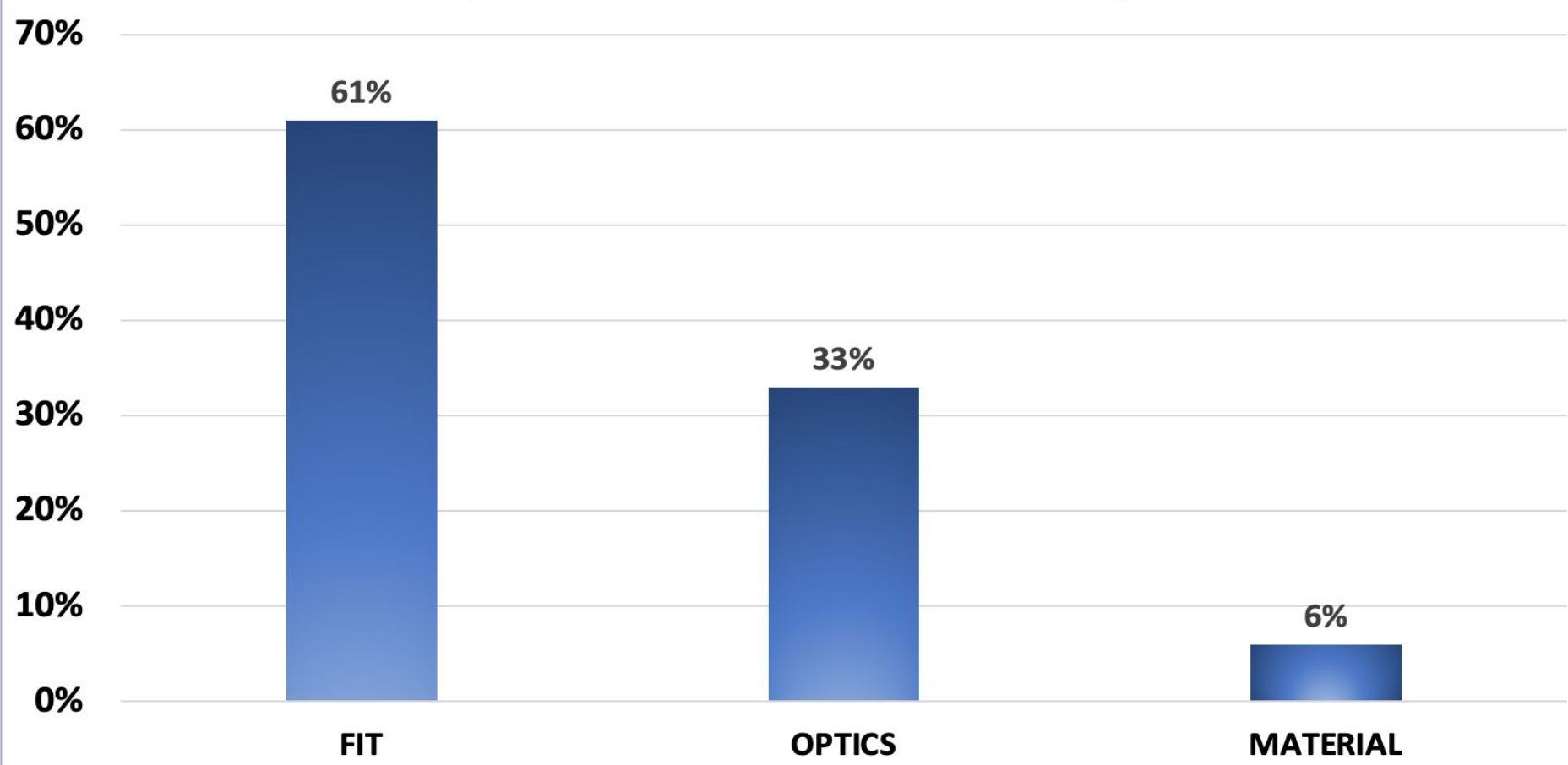
## Disclosures

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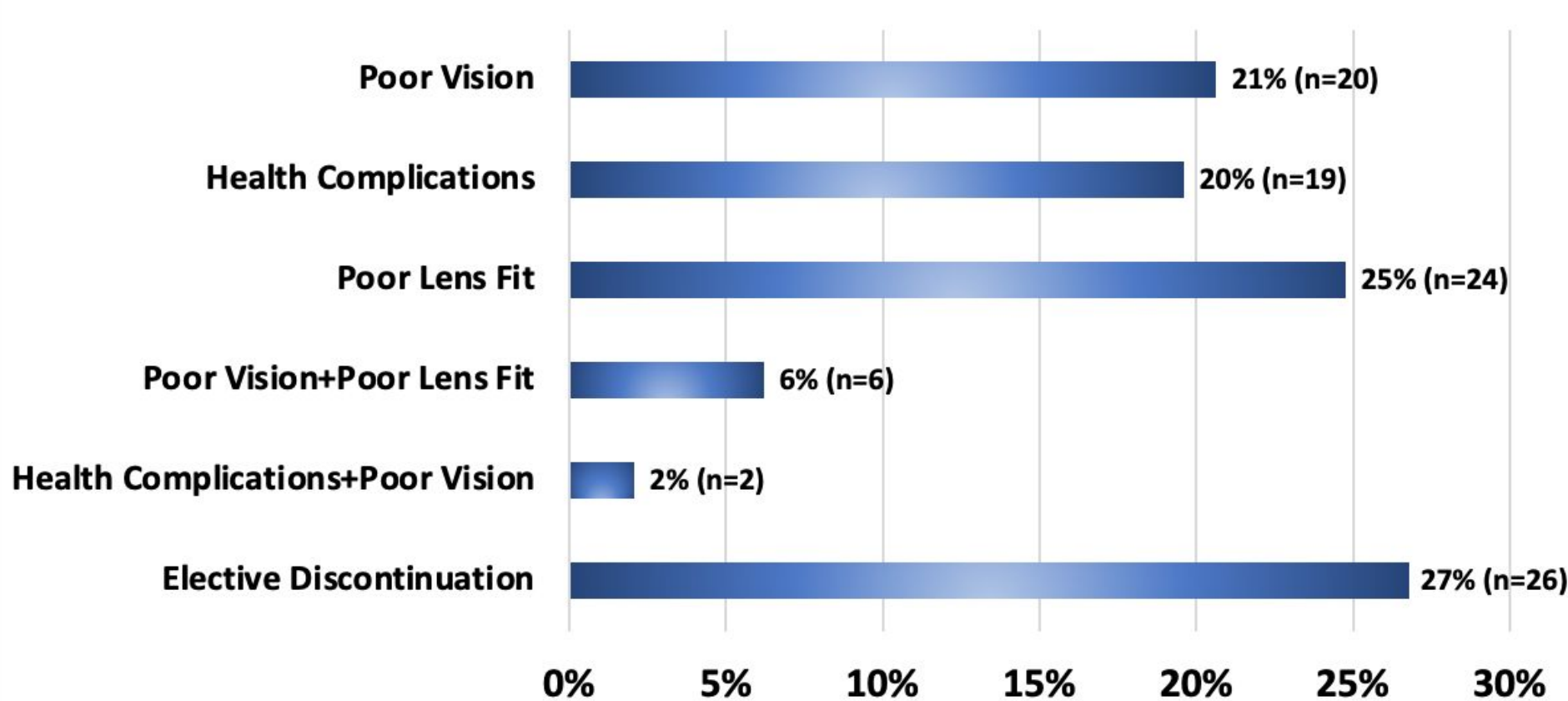
### NUMBER OF LENSES REQUIRED TO FINALIZE



### INDICATIONS FOR REMAKES



### Failures



## Results

- 155 eyes had previously failed standard SL.
- The average number of lenses needed to finalize a fit was  $2.5 \pm 1.2$ .
- Of lens remakes, 61% were for fit modifications, 33% were for optics, and 6% were for material changes.
- First fit success rate was 21%, and 82% of successful fits were completed with 3 lenses or less.
- Of the 418 eyes attempted to be fit, 97 eyes failed, yielding a 77% overall success rate.
- 20 eyes failed due to poor visual outcome.
- 19 eyes failed due to health complications which were related or unrelated to SL.
- 24 eyes failed due to a poor fitting relationship.
- 6 eyes failed due to a combination of a poor fitting relationship and inadequate vision.
- 2 eyes failed due to a combination of health complications and inadequate vision.
- Of note, 26 eyes failed due to either elective discontinuation, elective surgical intervention, or were lost to follow up during the lens fitting.

## Conclusions

- SL fitting relationship is the main contributor to remakes and a main contributor to failure.
- Innovations in SL fitting technique and design may improve success.
- Further studies are needed to understand limitations that may contribute to inadequate fitting relationships.

## References

- Barnett M, Courey C, Fadel D, et al. CLEAR - Scleral lenses. *Cont Lens Anterior Eye*. 2021;44(2):270-288. doi:10.1016/j.clae.2021.02.001

