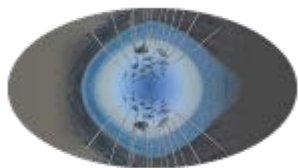


# Multifocal IOL explantation: Review of the literature

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ΠΑΝΕΠΙΣΤΗΜΙΟ  
ΘΕΣΣΑΛΟΝΙΚΗΣ

HSIOIRS

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Congress  
of the Hellenic Society  
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and Refractive Surgery

**\*\*All authors declare that there is no conflict of interest\*\***

## **Purpose:**

A systematic literature review to identify the reasons that lead to multifocal IOL explanation

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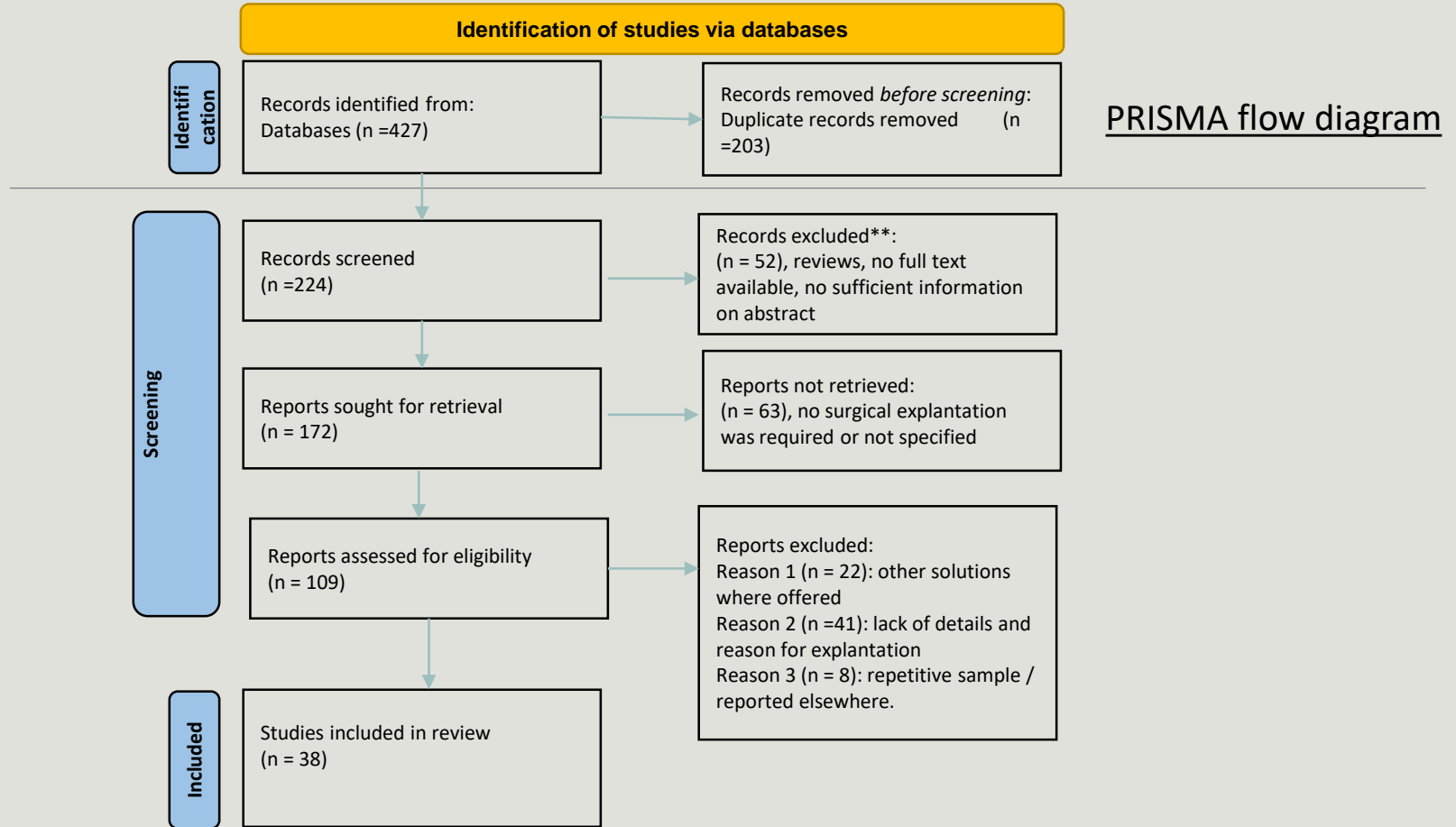
## **Methods:**

- Studies were systematically searched on PubMed, Medline, Google Scholar databases and the Cochrane library, from inception to 06 July 2023.
- The search strategy included terms “multifocal intraocular lens” and “explantation” or “exchange” in various combinations along with Boolean search operators “OR” and “AND.”
- Two independent investigators (ES, GB) reviewed titles and abstracts of all studies found, applying **eligible criteria**.
- All potentially eligible studies received a full-text evaluation to assess whether inclusion/exclusion criteria were satisfied.
- Reference lists of eligible studies were searched, along with meeting abstracts, and study registries that have not been published but were relevant for the analysis.

## **Eligibility criteria for included studies:**

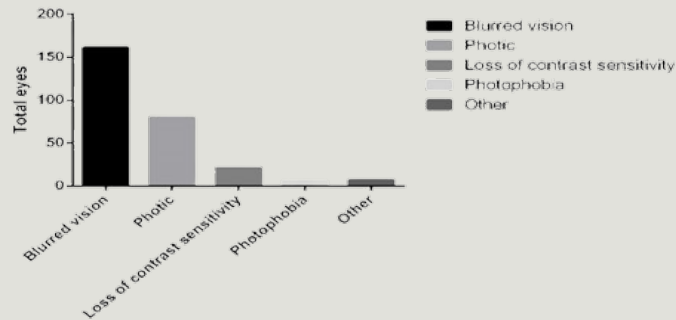
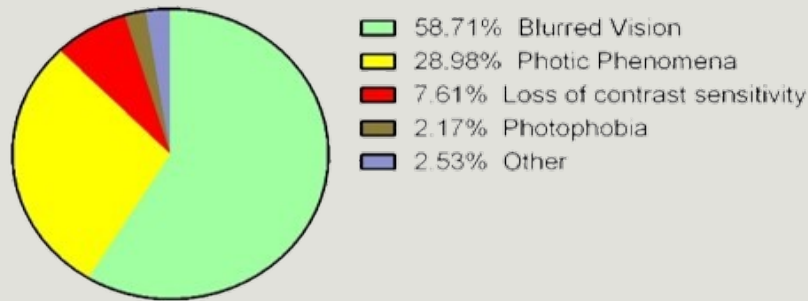
- All study design types except reviews were considered for inclusion in this systematic review
- Only studies reporting cases of multifocal IOL explantation with or without IOL exchange were included
- Only papers published in English and in peer-reviewed journals were included
- No publication date or publication status restrictions were imposed.
- The primary outcome was the primary reason which led to the decision for multifocal IOL explantation

# This analysis was conducted following PRISMA checklist guidelines



- Results:**
- ✓ 38 studies were included in this analysis
  - ✓ There are 21 case reports (reporting only 1 eye) and 17 case series which included more than 1 eye (range 2-50 eyes)
  - ✓ In total 276 eyes of 232 patients were included in this review
  - ✓ Mean patient age at the time of explantation was  $68.3 \pm 5.4$  years, however, age information was available in only 21 out of the 38 studies.
  - ✓ The mean time between the first surgery of the multifocal IOL implantation and the second surgery of its removal was  $31.4 \pm 8.8$  months (range 2 – 84 months).
  - ✓ The measured outcomes in this review were the patient symptoms which suggested the decision for the multifocal IOL explantation and the objective signs (if any) that the final decision was made
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## Patient symptoms which finally lead to multifocal IOL explantation



**Blurred vision** (n=162)

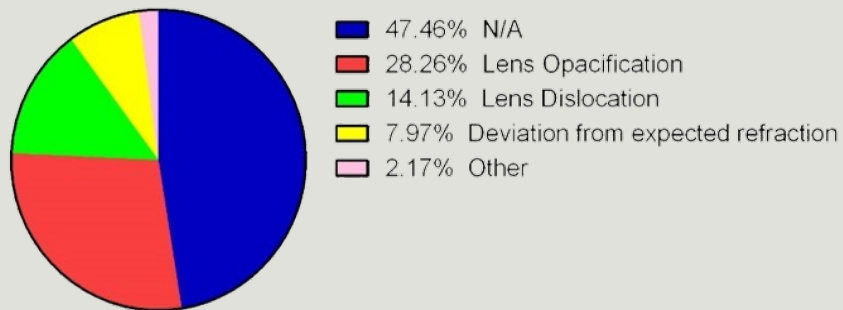
**Dysphotopic phenomena** (n=80)

**Loss of contrast sensitivity** (n=21)

**Persistent photophobia** (n=6)

**“Other” reasons** (n=7) which included bad binocular vision, persistent headaches and aniseikonia

- ❑ Available data from the surgeon's perspective were collected in cases where significant findings were found in ophthalmic examination.
- ❑ if no objective findings were noted, or not reported, "N/A" was reported for this analysis
- ❑ The term "Other" included reasons such as: corneal edema, uncontrolled high intraocular pressure, inflammation, and uveitis-glaucoma-hyphema syndrome



**We can observe that for the majority of cases (n=131) no objective findings were noted or provided by the authors for the explanted cases.**



- Not many interventions are applicable in most cases in order to avoid explantation
- Extra care must be given preoperatively

- ✓ Blurred vision, photic phenomena, reduction of contrast sensitivity account for about 95% of the explantation cases
- ✓ In an attempt to explain persistent patient symptoms when there is not a profound reason, symptoms are attributed to neuroadaptation failure



**The ability to neuro-adapt to the multifocal IOL is essential for optimal visual function and to avoid complications**

## Conclusions:

- Typically, multifocal IOLs are well tolerated with the majority of patients having spectacle independence after the operation.

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- The most common adverse symptoms associated with patient's dissatisfaction are blurred vision and photic phenomena, like halos and glare.
- Although, a profound explanation is not always found, those might be associated with lens opacification, residual refractive error, lens dislocation and posterior capsule opacification.
- To avoid patient dissatisfaction after multifocal IOL implantation, an exhaustive pre-operative examination is necessary, to address patient needs and lifestyle.
- It is important for the patient to set realistic expectations and have the ability to neuro-adapt to the multifocal IOL.
- It is evident that mIOL explantation is not exempt from complications, but it can be a feasible option and may significantly improve patient's satisfaction.