

The State of the Art of Preoperative Management Strategies to Enhance Recovery in Uveal Melanoma



Michelle Pham MSc MD(C)¹, Emmet Soibelman BKin(C)², Adam Wandzura MD³, Paige Campbell MD⁴, Ezekiel Weis MPH MD FRCSC^{4,5}, Trafford Crump PhD¹

1. Cumming School of Medicine, University of Calgary, Calgary, AB, Canada.
2. Faculty of Kinesiology, University of Alberta, Edmonton, AB, Canada.
3. Department of Ophthalmology, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada.
4. Department of Ophthalmology, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, AB, Canada.
5. Section of Ophthalmology, Cumming School of Medicine, University of Calgary, Calgary, AB, Canada.

Michelle Pham
michelle.pham1@ucalgary.ca

Background

- Uveal melanoma is the most common primary intraocular malignancy.¹
- Surgery achieves good tumour control.²
- However, significant visual, physical, and psychosocial impacts can remain.²
- Recovery after surgery is a multidimensional process.

Preoperative rehabilitation:

- Interventions delivered before surgery.³
- Enhance functional capacity and physiological reserve.³
- Aim to withstand surgical stress and improve postoperative outcomes.³

Enhanced Recovery After Surgery (ERAS):

- Multimodal perioperative pathways.⁴
- Replace traditional pathways with evidence-based care.⁴
- Associated with reduced complications, shorter hospital stays, and faster recovery.⁵
- Guidance to optimize recovery has not been established in uveal melanoma.

Study Aims

1. Review clinical guidelines for uveal melanoma.
2. Synthesize and appraise preoperative recommendations related to surgical recovery.
3. Apply ERAS preoperative principles to uveal melanoma.

Methods

Review of Guidelines

- A systematic search of Medline, Embase, and Cochrane was conducted in August 2025 for primary uveal melanoma management guidelines published within the past seven years.
- Two reviewers independently screened articles in duplicate.
- Preoperative recommendations were extracted, and a content analysis was conducted.
- Strength of recommendations were evaluated using the Scottish Intercollegiate Guidelines Network (SIGN) grading system 1999-2012.⁶

Review of ERAS Preoperative Principles

- Targeted search conducted to identify studies supporting ERAS principles potentially applicable to preoperative uveal melanoma care.

Results

- In total, eight guidelines published between 2019 and 2025 met the inclusion criteria (**Figure 1**).
- Five (63%) were based in North America and three (37%) in Europe.

Guideline Content Analysis

- Most (50%) guidelines provided recommendations on **staging and prognostication** (**Table 1**).
- Staging and prognostication recommendations were supported by strong evidence (**Grade A**)
 - Consisting of at least high quality one meta-analysis, systematic review, or RCT directly applicable to target population and demonstrating overall consistency of results.

Recovery-Related Preoperative Guidance

- Two (25%) guidelines discussed recovery-related preoperative recommendations (**Table 1**).
- Recommendations were largely rated as **Grade D** or **Good Practice Points**.
 - Guidance was based on evidence-based practices, but direct sources were not noted, and a survey of patients with uveal melanoma.
- Themes from recovery-related recommendations included:
 - **Patient Education & Expectation Management:** Provide clear, individualized information about treatment and postoperative recovery and symptoms.
 - **Psychosocial Support:** Address emotional, psychological, and social concerns. Consider referral to Psychosocial Oncology or support groups.
 - **Clinic and Workflow Optimization:** Ensuring timely appointments, remote consultations if possible, and family support if desired.
 - **Nutritional Optimization:** To address comorbid ophthalmologic conditions, such as omega-3 fatty acid and flaxseed intake for dry eye syndrome

Adopting ERAS Principles to Uveal Melanoma

- Possible areas of application include:
 - Ocular Surface Optimization
 - Multimodal Analgesia
 - Exercise Prehabilitation
 - Smoking Cessation
 - Pre-enucleation Radiotherapy

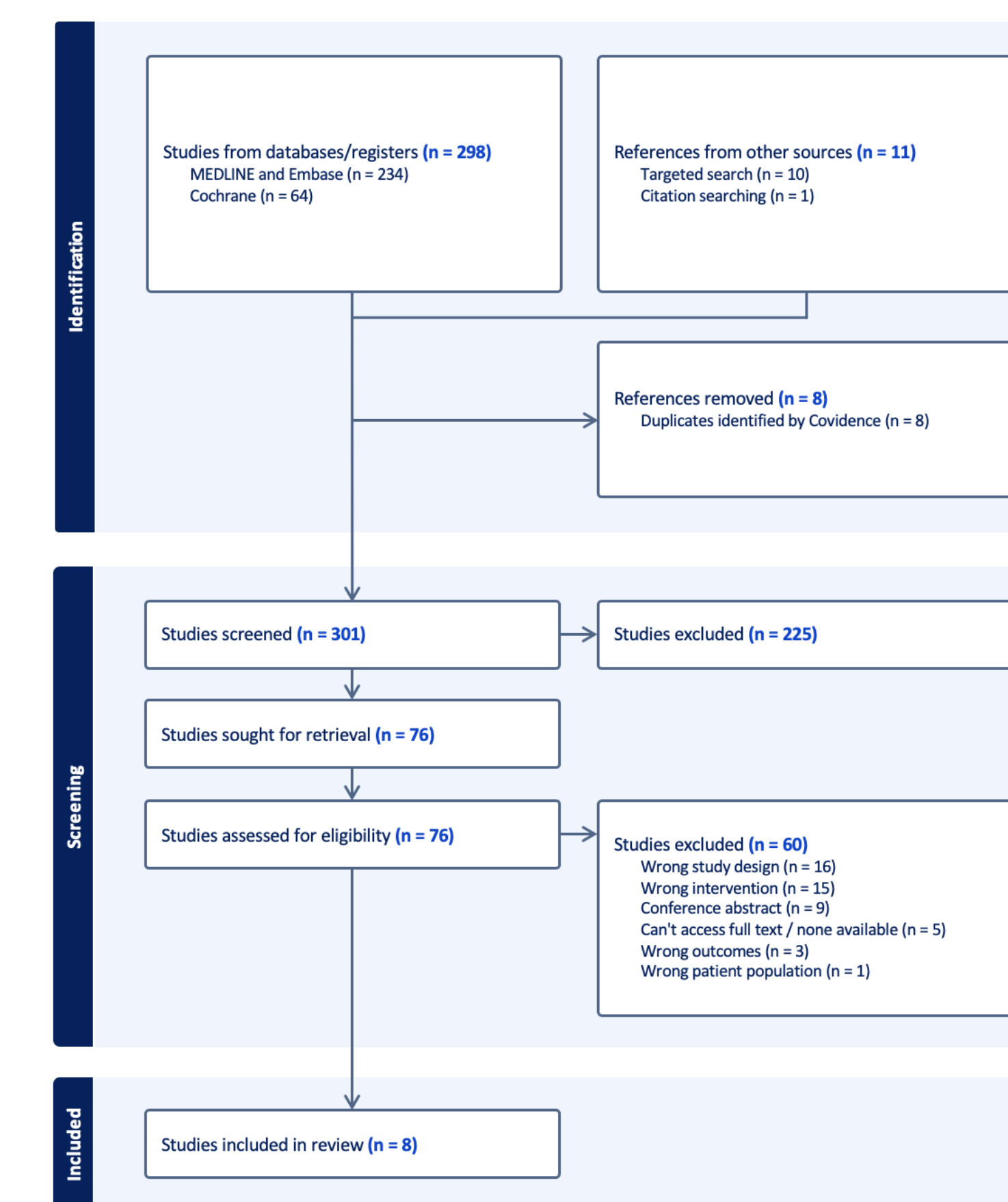


Figure 1. PRISMA 2020 flow diagram.

First Author(s)	Year	Continent	Scope of Preoperative Intervention(s)	Recovery-Related Preoperative Intervention(s)	Strength of Recommendation
Garbe	2025a and 2025b	Europe	Staging and prognostication	None	Not Applicable
Krema	2019	North America	Prognostication	Patient education	GPP or D
				Psychosocial care	GPP or D
				Symptom management	GPP or D
				Clinic coordination/management	GPP or D
			Clinical nutrition	GPP or D	
NIH Cancer Institute	2025	North America	Staging and prognostication	None	Not Applicable
Seth	2023	North America	None	None	Not Applicable
Weis	2024	North America	Staging and prognostication	None	Not Applicable
Carter	2025	Europe	Prognostication	Patient education	GPP
				Clinic coordination/management	GPP
				Psychosocial care	GPP
Rao	2020	North America	None	None	Not Applicable

GPP = Good Practice Points; NIH = National Institutes of Health.

Table 1. Summary of included uveal melanoma management guidelines.

Discussion

- Recent guidance primarily focus on interventions that optimize survival metrics and visual outcomes.
- Limited guidance and evidence exists addressing recovery-focused interventions.
- “Preoperative care” recommendations in uveal melanoma often reflect general best practice rather than surgery-specific optimization.
- Limited primary research on preoperative optimization may contribute to gaps in current uveal melanoma guidance.
- ERAS-informed strategies, such as multimodal analgesia, exercise prehabilitation, and nutrition optimization, may show promise for ocular oncology.
- Future studies should assess short- and long-term outcomes of preoperative recovery interventions.
- Standardized perioperative pathways may support more consistent, evidence-based uveal melanoma care.

Limitations

- Possible exclusion of influential older guidance.
- Guideline-based practices ≠ real life practices.
- Variability in methodology, scope, and reporting across guidelines.

Future Directions

- Evaluate the state of the art of intraoperative and postoperative recovery-optimizing recommendations for uveal melanoma.
- Conduct a DELPHI consensus study to identify key areas in uveal melanoma for an ERAS guideline.
- Submit a protocol and proposal to develop an ERAS guideline for uveal melanoma.

References

