Appendix 1. Literature search strategy

TITLE-ABS-

KEY (open OR globe AND injury OR eye AND trauma OR perforating OR penetratin

g OR open AND wound OR ocular AND vitrectomy) AND (LIMIT-

TO (EXACTKEYWORD , "Vitrectomy") OR LIMIT-TO (EXACTKEYWORD , "Eye

Injuries, Penetrating") OR LIMIT-TO (EXACTKEYWORD , "Open Globe

Injury") OR LIMIT-TO (EXACTKEYWORD , "Prospective Studies") OR LIMIT-

TO (EXACTKEYWORD , "Open Globe") OR LIMIT-TO (EXACTKEYWORD , "Controlled

Study") OR LIMIT-TO (EXACTKEYWORD , "Eye Surgery") OR LIMIT-

TO (EXACTKEYWORD , "Penetrating Trauma") OR LIMIT-

TO (EXACTKEYWORD , "Ocular Trauma") OR LIMIT-

TO (EXACTKEYWORD , "Perforating Eye Injury") OR LIMIT-

TO (EXACTKEYWORD , "Wounds, Penetrating") OR LIMIT-

TO (EXACTKEYWORD , "Clinical Trial") OR LIMIT-

TO (EXACTKEYWORD , "Humans") OR LIMIT-

TO (EXACTKEYWORD , "Human") OR LIMIT-TO (EXACTKEYWORD , "Clinical

Article") OR LIMIT-TO (EXACTKEYWORD , "Pars Plana Vitrectomy") OR LIMIT-

TO (EXACTKEYWORD , "Prospective Study"))

Appendix 2. Study details, outcome measurement, and analysis

S.N.	Author/Year	year	Country	Study design	Mean age ± SD (age range) years	No. of participants early /delayed group	Type of Injury	Outcome measures	Quality assessment	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1	Chauhan et al 2022 (21)	2022	US	Retrospective observational	45.2 ± 19.1 (10 - 92)	39/35	Blunt Sharp IOFB Projectile	Functional and anatomical outcome		Yes	Yes	No	No	No	Yes	Unsure	Yes
2	Coleman 1982 (7)	1982	US	Retrospective observational	NA	37/22	Severly traumatized eyes	Improvement in visual acuity		Yes	Yes	Yes	Unsure	Unsure	No	Unsure	yes
3	De Juan et al 1984 (8)	1984	US	Retrospective observational	NA	49/54	Penetrating	Visual outcome (Final visual acuity)		No	Yes	No	Unsure	No	No	Unsure	yes
4	Ferreira et al 2015 (19)	2015	Portugal	Retrospective observational	42 (7 - 74)	12/6	Perforating	BCVA, rates of global survival and PVR and anato		Yes	Yes	Yes	Yes	No	No	Yes	No

S.N.	Author/Year	year	Country	Study design	Mean age ± SD (age)	No. of participants eary/delay	Type of Injury	Outcome measures	Quality assessment	Q1	Q2	Q3	Q4	Q5	Q6	Q7
								mical success								
6	Lin et al 2016 (20)	2016	US	Retrospective observational	46.1 (18.3 - 90.7)	4/4	Rupture IOFB	Visual outcome (BCVA)		Yes	No	No	Yes	Yes	Yes	Unsure	Yes
7	Petrovic et al 2004 (22)	2004	Slovenia	Retrospective observational	29.5 (5 - 67)	29/14	Rupture Penetrating Perforating IOFB	BCVA, RD and PVR at final follow-up		Yes	Yes	Yes	Yes	Unsure	Yes	Yes	Yes
8	Ramsay 1985 (16)	1985	US	Retrospective observational	5-13	6/4	Double penetrating (Perforating)	Anatomical, functional and visual outcomes		Yes	Yes	Yes	Unsure	No	No	Yes	No
9	Yu et al 2019 (10)	2019	China	Retrospective observational	36.6±12.8 (10 - 69)	20/25	Rupture Penetrating Perforating	Functional success, anatomical success, and surgical failure		Yes	Yes	Yes	Unsure	No	No	Unsure	Yes

RCTs and Prospective studies

S.N.	Author/Year	year	Country	Study design	Mean age ± SD (age)	No. of participants eary/delay	Type of Injury	Outcome measures	Quality assessment	Q1	Q2	Q3	Q4	Q5	Q6	Q7

				(range) years	ed group									
10	He et al 2019 (9)	2019	China	Randomized comparative	46.7±11.4 (early group) 42.3±10.3 (delayed group)	21/25	Perforating Rupture	Development of TPVR, rates of retinal reattachment, and eye enucleation	Low	Low	Low	Unsure	low	Low	Unsure
11	Zhang et al 2014 (18)	**2014**	**China**	**Prospective cohort**	**NA**	**15/18**	**Open globe**	**Retinal re-attachment, incidence of PVR, visual recovery and complications**	**High**	**High**	**High**	**High**	**low**	**low**	**Unsure**

Appendix 3. Analytical cross sectional studies Critical Appraisal Tool

Answers: Yes, No, Unclear or Not/Applicable

1. Were the criteria for inclusion in the sample clearly defined?

The authors should provide clear inclusion and exclusion criteria that they developed prior to recruitment of the study participants. The inclusion/exclusion criteria should be specified (e.g., risk, stage of disease progression) with sufficient detail and all the necessary information critical to the study.

2. Were the study subjects and the setting described in detail?

The study sample should be described in sufficient detail so that other researchers can determine if it is comparable to the population of interest to them. The authors should provide a clear description of the population from which the study participants were selected or recruited, including demographics, location, and time period.

3. Was the exposure measured in a valid and reliable way?

The study should clearly describe the method of measurement of exposure. Assessing validity requires that a gold standard is available to which the measure can be compared. The validity of exposure measurement usually relates to whether a current measure is appropriate or whether a measure of past exposure is needed.

Reliability refers to the processes included in an epidemiological study to check repeatability of measurements of the exposures. These usually include intra-observer reliability and inter-observer reliability.

4. Were objective, standard criteria used for measurement of the condition?

It is useful to determine if patients were included in the study based on either a specified diagnosis or definition. This is more likely to decrease the risk of bias. Characteristics are another useful approach to matching groups, and studies that did not use specified diagnostic methods or definitions should provide evidence on matching by key characteristics.

5. Were confounding factors identified?

Confounding has occurred where the estimated intervention exposure effect is biased by the presence of some difference between the comparison groups (apart from the exposure investigated/of interest). Typical confounders include baseline characteristics, prognostic factors, or concomitant exposures (e.g. smoking). A confounder is a difference between the comparison groups and it influences the direction of the study results. A high-quality study at the level of cohort design will identify the potential confounders and measure them (where

possible). This is difficult for studies where behavioral, attitudinal or lifestyle factors may impact on the results.

6. Were strategies to deal with confounding factors stated?

Strategies to deal with effects of confounding factors may be dealt within the study design or in data analysis. By matching or stratifying sampling of participants, effects of confounding factors can be adjusted for. When dealing with adjustment in data analysis, assess the statistics used in the study. Most will be some form of multivariate regression analysis to account for the confounding factors measured.

7. Were the outcomes measured in a valid and reliable way?

Read the methods section of the paper. If for e.g. lung cancer is assessed based on existing definitions or diagnostic criteria, then the answer to this question is likely to be yes. If lung cancer is assessed using observer reported, or self-reported scales, the risk of over- or under-reporting is increased, and objectivity is compromised. Importantly, determine if the measurement tools used were validated instruments as this has a significant impact on outcome assessment validity.

Having established the objectivity of the outcome measurement (e.g. lung cancer) instrument, it's important to establish how the measurement was conducted. Were those involved in collecting data trained or educated in the use of the instrument/s? (e.g. radiographers). If there was more than one data collector, were they similar in terms of level of education, clinical or research experience, or level of responsibility in the piece of research being appraised?

8. Was appropriate statistical analysis used?

As with any consideration of statistical analysis, consideration should be given to whether there was a more appropriate alternate statistical method that could have been used. The methods section should be detailed enough for reviewers to identify which analytical techniques were used (in particular, regression or stratification) and how specific confounders were measured.

For studies utilizing regression analysis, it is useful to identify if the study identified which variables were included and how they related to the outcome. If stratification was the analytical approach used, were the strata of analysis defined by the specified variables? Additionally, it is also important to assess the appropriateness of the analytical strategy in terms of the assumptions associated with the approach as differing methods of analysis are based on differing assumptions about the data and how it will respond.