

Quality in Prognostic Studies (QUIPS) tool for Risk of Bias Assessment

Study participation:

- The study sample adequately represents the population of interest
- Adequate participation in the study by eligible persons
- Description of the source population or population of interest
- Description of the baseline study sample
- Adequate description of the sampling frame and recruitment
- Adequate description of the period and place of recruitment
- Adequate description of inclusion and exclusion criteria

High Risk	The relationship between the PF and outcome is very likely to be different for participants and eligible nonparticipants
Moderate Risk	The relationship between the PF and outcome may be different for participants and eligible nonparticipants
Low Risk	The relationship between the PF and outcome is unlikely to be different for participants and eligible nonparticipants

Study Attrition:

- The study data available (i.e., participants not lost to follow-up) adequately represent the study sample
- Adequate response rate for study participants
- Description of attempts to collect information on participants who dropped out
- Reasons for loss to follow-up are provided
- Adequate description of participants lost to follow-up
- There are no important differences between participants who completed the study and those who did not

High Risk	The relationship between the PF and outcome is very likely to be different for completing and noncompleting participants
Moderate Risk	The relationship between the PF and outcome may be different for completing and noncompleting participants
Low Risk	The relationship between the PF and outcome is unlikely to be different for completing and noncompleting participants

Prognostic Factor Measurement:

- The PF is measured in a similar way for all participants
- A clear definition or description of the PF is provided
- Method of PF measurement is adequately valid and reliable
- Continuous variables are reported or appropriate cut points are used
- The method and setting of measurement of PF is the same for all study participants
- Adequate proportion of the study sample has complete data for the PF
- Appropriate methods of imputation are used for missing PF data

High Risk	The measurement of the PF is very likely to be different for different levels of the outcome of interest
Moderate Risk	The measurement of the PF may be different for different levels of the outcome of interest

Low Risk	The measurement of the PF is unlikely to be different for different levels of the outcome of interest
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Outcome Measurement:

- The outcome of interest is measured in a similar way for all participants
- A clear definition of the outcome is provided
- Method of outcome measurement used is adequately valid and reliable
- The method and setting of outcome measurement is the same for all study participants

High Risk	The measurement of the outcome is very likely to be different related to the baseline level of the PF
Moderate Risk	The measurement of the outcome may be different related to the baseline level of the PF
Low Risk	The measurement of the outcome is unlikely to be different related to the baseline level of the PF

Study Confounding:

- Important potential confounding factors are appropriately accounted for
- All important confounders are measured
- Clear definitions of the important confounders measured are provided
- Measurement of all important confounders is adequately valid and reliable
- The method and setting of confounding measurement are the same for all study participants
- Appropriate methods are used if imputation is used for missing confounder data
- Important potential confounders are accounted for in the study design
- Important potential confounders are accounted for in the analysis

High Risk	The observed effect of the PF on the outcome is very likely to be distorted by another factor related to PF and outcome
Moderate Risk	The observed effect of the PF on outcome may be distorted by another factor related to PF and outcome
Low Risk	The observed effect of the PF on outcome is unlikely to be distorted by another factor related to PF and outcome

Statistical Analysis and Reporting:

- The statistical analysis is appropriate, and all primary outcomes are reported
- Sufficient presentation of data to assess the adequacy of the analytic strategy
- Strategy for model building is appropriate and is based on a conceptual framework or model
- The selected statistical model is adequate for the design of the study
- There is no selective reporting of results

High Risk	The reported results are very likely to be spurious or biased related to analysis or reporting
Moderate Risk	The reported results may be spurious or biased related to analysis or reporting
Low Risk	The reported results are unlikely to be spurious or biased related to analysis or reporting