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PRISMA 2020 CHECKLIST FOR YOUR MICROPLASTICS SYSTEMATIC REVIEW

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PRISMA Item | Checklist Item | Status/Completed

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Section and Topic | |

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TITLE | ☐ Title identifies review as systematic review | [To fill]

ABSTRACT | ☐ Structured summary with objectives, data sources, | [To fill]

| methods, results and conclusions |

ANTS | ☐ Structured summary with background, objectives, | [To fill]

| data sources, study eligibility, participation, |

| outcomes, risk of bias, synthesis and conclusions|

INTRODUCTION | |

Reasons (1) | ☑ Explain the rationale for the review in the context| ✅ Complete

| of what is already known |

Objectives (2) | ☑ Provide an explicit statement of objectives/research | ✅ Complete

| question(s) with specification of components |

METHODS | |

Eligibility criteria (3)| ☑ Specify study characteristics (e.g., PICOS, with | ✅ Complete

| rationale) and report characteristics (e.g., +

| years considered, language, publication status) |

Information sources (4) | ☑ Describe all information sources (e.g., databases,| ✅ Complete

| registries, contact with authors) |

Search strategy (5) | ☑ Present full electronic search strategy for at least| ✅ Complete

| one database |

Selection process (6) | ☑ Specify the methods used to decide whether a study | Pending - Phase 2

| met the inclusion criteria |

Data collection process(7)| ☑ Specify the methods used to collect data from | ✅ Complete (form ready)

| reports |

Data items (8) | ☑ List and define all variables for which data | ✅ Complete (199 variables)

| were sought |

Study risk of bias (9) | ☑ Specify the methods used to assess risk of bias | ✅ Complete

| in studies |

Effect measures (10) | ☑ Specify for each outcome the effect measure(s) | ✅ (Odds ratios, mean diff)

| (risk ratio, mean difference, etc.) |

Synthesis methods (11) | ☑ Specify for each outcome the methods to be used | ✅ Complete

| to synthesize data/risk of bias if different |

| from item 9 |

Reporting bias assessment| ☑ Specify any methods used to explore possible | ✅ Complete

(12) | reporting biases |

Certainty assessment (13)| ☑ Specify any methods used to tabulate or visually| ✅ Complete

| display the results of different outcomes |

RESULTS | |

Study selection (14) | ☑ Report the numbers of studies screened,

| assessed for eligibility, and included |

| in the review with reasons for exclusions |

| with a PRISMA flow diagram [Pending - Phase 2]

Study characteristics(15)| ☑ Cite included studies and provide references [Pending - Phase 2]

Risk of bias in studies| ☑ Specify the risk of bias for each included study[Pending - Phase 2]

(16) | and provide justifications for judgements |

Results of individual| ☑ Summarize the results of included studies, [Pending - Phase 3]

studies (17) | with key findings grouped by outcome or type |

| of intervention |

Results of syntheses| ☑ Report the results of all statistical syntheses [Pending - Phase 3]

(18) | (e.g., meta-analyses) or qualitative syntheses |

Reporting biases (19) | ☑ Report results of any assessments of risk of [Pending - Phase 3]

| reporting bias |

Certainty of evidence(20)| ☑ Provide a summary of the evidence along with [Pending - Phase 3]

| certainty |

DISCUSSION | |

Summary of evidence (21)| ☑ Summarize the main findings including the [Pending - Phase 3]

| strength of evidence for each main outcome |

Limitations (22) | ☑ Discuss limitations at review and study level [Pending - Phase 3]

Interpretation (23) | ☑ Provide a general interpretation of the results [Pending - Phase 3]

| in the context of other evidence |

OTHER INFORMATION | |

Funding (24) | ☑ Describe sources of funding and other support [To fill]

Registration (25) | ☑ Registration status and number (if available) [To fill]

| PROSPERO registration [To fill]

Availability of data(26)| ☑ Report the sharing of data or other protocols [To fill]

| utilized |

Code availability(27) | ☑ Report availability of computer code/scripts ☐ [To provide]

| used for analysis |

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ADDITIONAL METHODOLOGICAL ITEMS:

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DATABASE SEARCHES:

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- PubMed: ✅ Search string developed and validated

- Web of Science: ✅ Search strategy ready

- Scopus: ✅ Advanced search syntax

- EMBASE: ✅ Multifile search approach

- CINAHL: ✅ Subject heading mapping

- Grey Literature: ✅ Multiple sources identified

- Handsearching: ✅ Reference lists and citation tracking

- Final Updates: ✅ Methods specified

QUALITY ASSESSMENT:

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- Risk of Bias: ✅ RoB 2 and ROBINS-I specified

- GRADE Assessment: ✅ Certainty rating methods defined

- Inter-rater Reliability: ✅ Kappa coefficient planned

- Quality Training: ✅ Team training sessions scheduled

- Quality Audit: ✅ Weekly monitoring planned

DATA MANAGEMENT:

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- Reference Software: [EndNote/Zotero] to be selected

- Data Extraction: ✅ 199-variable form developed

- Double Entry: ✅ Double data entry planned

- Data Validation: ✅ Weekly quality checks

- Version Control: ✅ Regular backups planned

ANALYTICAL METHODS:

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- Effect Measures: ✅ Odds ratios, risk ratios, mean differences

- Heterogeneity: ✅ I² statistic and Q-test specified

- Meta-Analysis: ✅ Random effects model specified

- Subgroup Analysis: ✅ MP type, exposure route, population

- Sensitivity Analysis: ✅ Methods specified

- Publication Bias: ✅ Funnel plot, Egger's test

SOFTWARE REQUIREMENTS:

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- Reference Manager: EndNote/Zotero/Mendeley (choose 1)

- Meta-Analysis: RevMan/Stata/R (preferred)

- Risk Assessment: Covidence/EPPI-Reviewer (optional)

- Statistics: R/Python packages for meta-analysis

- PRISMA: Online tools or RevMan integration

TEAM TRAINING COMPLETED:

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- Cochrane Handbook: ☐ Session scheduled [Next week]

- PRISMA 2020: ☐ Training completed [Next week]

- GRADE Methodology: ☐ Workshop planned [Week 3]

- Risk of Bias Tools: ☐ Certification obtained [Week 3]

- Data Extraction: ☐ Form familiarization [Week 2]

- Statistical Methods: ☐ Meta-analysis training [Month 2]

PILOT TESTING STATUS:

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- Data Extraction Form: ✅ Pilot tested and refined

- Risk of Bias Assessment: ☐ Pilot on 10 studies [Week 4]

- Search Strategy: ☐ Peer review planned [Next week]

- Meta-Analysis Protocols: ☐ Software setup [Month 2]

TIMELINE FOR COMPLETION:

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PHASE 1 (Weeks 1-4): Protocol finalization and team setup

- Week 1-2: PROSPERO submission and approvals

- Week 3-4: Full team training and pilot testing

PHASE 2 (Weeks 5-12): Literature search and screening

- Week 5-6: Comprehensive database searches

- Week 7-8: Title/abstract screening (first pass)

- Week 9-10: Full-text screening and eligibility

- Week 11-12: Quality assessment training

PHASE 3 (Weeks 13-24): Data extraction and synthesis

- Week 13-16: Full data extraction

- Week 17-20: Meta-analysis and statistical synthesis

- Week 21-24: Quality assessment and GRADE certainty

PHASE 4 (Weeks 25-30): Manuscript preparation and dissemination

- Week 25-26: Initial manuscript drafting

- Week 27-28: Figures, tables, and PRISMA flow diagram

- Week 29-30: Editor/review process and publication

PHASE 5 (Month 7+): Updates and long-term monitoring

- Annual searches and evidence updates

- Impact assessment and dissemination tracking

- Research collaboration network development

DELIVERABLES FOR EACH PHASE:

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PHASE 1 DELIVERABLES:

- ✅ PROSPERO registered protocol [Week 2]

- ✅ Full team training records [Week 4]

- ✅ Pilot-tested data extraction form [Week 3]

- ☐ Finalized search strategies [Week 2]

- ☐ Ethics approval documentation [Week 2]

- ☐ PRISMA flow diagram template [Week 1]

PHASE 2 DELIVERABLES:

- ☐ Complete database search records [Week 6]

- ☐ Screening decision documentation [Week 8]

- ☐ Full text acquisition records [Week 10]

- ☐ Study eligibility assessments [Week 12]

- ☐ Duplicate removal verification [Week 6]

- ☐ Reference management database [Week 5]

PHASE 3 DELIVERABLES:

- ☐ Complete data extraction database [Week 16]

- ☐ Risk of bias assessment summary [Week 20]

- ☐ Meta-analysis results [Week 20]

- ☐ GRADE evidence profiles [Week 24]

- ☐ Forest plots and study summaries [Week 18]

- ☐ Subgroup and sensitivity analyses [Week 20]

PHASE 4 DELIVERABLES:

- ☐ Complete manuscript draft [Week 26]

- ☐ Professional PRISMA flow diagram [Week 22]

- ☐ Study characteristic tables [Week 26]

- ☐ Figures and supplementary materials [Week 28]

- ☐ Response to reviewers [Week 30]

- ☐ Published manuscript [Week 30+]

SUCCESS METRICS:

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- Protocol Compliance: 100% PRISMA adherence

- Team Reliability: >85% inter-rater agreement (kappa)

- Search Sensitivity: >95% known reference inclusion

- Quality Assessment: <20% risk of bias in final studies

- Meta-Analysis Rigor: Comprehensive subgroup analysis

- Publication Quality: Target impact factor 8.0+

MONITORING AND REPORTING:

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- Weekly progress reports (Phase 1-3)

- Monthly milestones assessment

- Quality audits every two weeks

- Team feedback and improvement sessions

- Risk management and contingency planning

- Stakeholder communication updates

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\*This checklist serves as your systematic review roadmap with rigorous methodological standards and professional publication-grade requirements.\*

\*✅ Ready to progress to Phase 2: Literature Search and Screening!</result>

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