MICROPLASTICS SYSTEMATIC REVIEW SEARCH STRATEGY

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DATABASE: PubMed/MEDLINE

SEARCH DATE: [Insert current date]

SEARCH PERIOD: Database inception to [current year]

PRIMARY SEARCH STRING (PubMed):

(("microplastics" OR "microplastic\*" OR "micro-plastic\*" OR "plastic particle\*" OR "nano-plastic\*" OR "nanoplastic\*" OR "MPs" OR "micro-sized plastic\*" OR "plastic microbeads") AND ("human\*" OR "health\*" OR "toxicity" OR "exposure" OR "effects" OR "disease" OR "disorder" OR "injury" OR "poisoning" OR "contamination" OR "pollution" OR "bioaccumulation" OR "particle" OR "particulate" OR "fibers")) NOT ("plant\*"[Title/Abstract] NOT "human\*"[MeSH Terms])

FULL PUBMED SEARCH WITH FILTERS:

(("microplastics"[Title/Abstract] OR "microplastic\*"[Title/Abstract] OR "micro-plastic\*"[Title/Abstract] OR "plastic particle\*"[Title/Abstract] OR "nirotic-plastic\*"[Title/Abstract] OR "petrochemical particle\*"[Title/Abstract] OR "plastic-type particle\*"[Title/Abstract] OR "micro-sized plastic\*"[Title/Abstract] OR "microbead\*"[Title/Abstract] OR "microscale plastic\*"[Title/Abstract]) AND ("human\*"[Title/Abstract] OR "man"[Mesh] OR "woman"[Mesh] OR "adult"[Mesh] OR "child\*"[Mesh] OR "adolescent"[Mesh] OR "age\*"[Title/Abstract] OR "population\*"[Title/Abstract]) AND ("health\*"[Title/Abstract] OR "toxicity"[Title/Abstract] OR "toxic\*"[Title/Abstract] OR "exposure"[Title/Abstract] OR "inhal\*"[Title/Abstract] OR "ingest\*"[Title/Abstract] OR "dermal"[Title/Abstract] OR "contact"[Title/Abstract]) AND ("effect\*"[Title/Abstract] OR "impact\*"[Title/Abstract] OR "outcome\*"[Title/Abstract] OR "disease\*"[Title/Abstract]) NOT ("plant\*"[Title/Abstract] OR "animal\*"[Title/Abstract] OR "fish\*"[Title/Abstract])) AND (PubDate>2000/01/01[Date - Publication] AND has abstract[text] AND (english[Language] OR french[Language] OR spanish[Language]))

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DATABASE: Web of Science Core Collection

SEARCH PERIOD: Database inception to present

TOPIC FIELD SEARCH:

TS=((microplastics OR microplastic\* OR micro-plastic\* OR plastic particle\* OR nano-plastic\* OR nanoplastic\* OR MPs OR plastic pollution OR plastic microfiber\* OR micro-fiber\*) AND (human\* OR adult\* OR child\* OR infant\* OR adolescent\* OR population\* OR worker\*) AND (health\* OR toxic\* OR exposure OR effect\* OR outcome\* OR disease\* OR disorder\* OR contam\* OR polluted OR bioaccum\* OR biokinetic\* OR pharmacokinet\* OR distrib\* OR absorp\*) AND (medical OR pathology OR histology OR biochemistry OR hematology OR immunology OR toxicology OR epidemiology OR public health))

REFINED SEARCH WITH FILTERS:

Document Types: Article, Review Article, Editorial, Clinical Study, Meta-Analysis

Publication Years: 2000-2025

Languages: English

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DATABASE: Scopus

SEARCH PERIOD: Database inception to present

TITLE-ABSTRACT-KEYWORDS SEARCH:

TITLE-ABS-KEY(("microplastics" OR "microplastic\*" OR "micro-plastic\*" OR "plastic particle\*" OR "nano-plastic\*" OR "nanoplastic\*" OR "MPs") AND ("human\*" OR "health\*" OR "toxicity" OR "exposure" OR "effects") W/15 ("disease\*" OR "disorder\*" OR "outcome\*" OR "impact\*") W/15 ("contamination" OR "pollution" OR "bioaccumulation"))

REFINED WITH LIMITS:

Document Type: Article, Review, Conference Paper, Book Chapter

Publication Stage: Final

Language: English

Publication Year: 2000-2025

Subject Area: Medicine, Environmental Science, Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology, Social Sciences

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DATABASE: EMBASE

SEARCH PERIOD: 1974 to present

EMASTRATEGY (Multifile search):

'plastic' /exp OR 'plastic particle'/exp OR 'microplastic'/exp OR 'nanoplastic'/de OR 'plastic pollution'/exp AND 'human'/exp OR 'human disease'/exp OR 'human toxicity'/exp AND 'exposure'/exp OR 'inhalation'/exp OR 'ingestion'/exp OR 'dermal absorption'/exp AND 'toxicology'/de OR 'public health'/de OR 'environmental health'/de

CHARACTERS SEARCH:

(('microplastics' OR 'microplastic\*' OR 'micro-plastic\*' OR 'plastic particle\*' OR 'nano-plastic\*' OR 'nanoplastic\*' OR 'MPs') AND ('human\*' OR 'health\*' OR 'toxicity' OR 'exposure' OR 'effects' OR 'disease' OR 'disorder' OR 'contamination' OR 'pollution' OR 'bioaccumulation' OR 'ingestion' OR 'inhalation' OR 'dermal') AND ('outcome\*' OR 'impact\*' OR 'influence' OR 'association' OR 'toxicity' OR 'health effect\*' OR 'pathology' OR 'biochemistry' OR 'immunology' OR 'endocrinology')) NOT ('plant\*' OR 'animal\*' OR 'fish\*' OR 'aquaculture' OR 'marine organism\*' OR 'terrestrial plant\*') AND [2000-2025]/py AND [english]/la

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DATABASE: CINAHL (Cumulated Index to Nursing and Allied Health Literature)

SEARCH PERIOD: Database inception to present

MAJOR SUBJECT HEADING + KEYWORD COMBINATION:

MH "Microplastics" OR MH "Plastic Pollution" OR TX microplastic\* OR TX plastic particle\* OR TX nanoplastic\* OR TX micro-sized plastic\* AND MH "Risk" OR MH "Health" OR MH "Toxicity" OR TX health effect\* OR TX toxic\* OR TX exposure OR TX contam\* OR TX polluted AND MH "Population Characteristics" OR TX human population\* OR TX demographic\* OR TX age group\*

COMBINED SEARCH STRING:

((TI microplastic\* OR AB microplastic\* OR MW microplastic\*) AND (TI human\* OR AB human\* OR TI health\* OR AB health\* OR TI toxic\* OR AB toxic\* OR TI effect\* OR AB effect\* OR TI outcome\* OR AB outcome\* OR TI disease\* OR AB disease\* OR TI exposure OR AB exposure OR TI contam\* OR AB contam\*)) AND (PD 20000101:20251231) AND (LA english)

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DATABASE: Environmental Science & Pollution Management Database

SEARCH PERIOD: Database inception to present

TOPIC SEARCH:

((microplastic\* OR micro-plastic\* OR plastic particle\* OR nano-plastic\* OR nanoplastic\* OR MPs OR plastic pollution OR microfiber\* OR microbead\*) AND (human\* OR man OR woman OR adult OR child\* OR population\* OR worker\*) AND (health\* OR toxic\* OR toxicological OR toxicology OR exposure OR inhalation OR ingestion OR dermal OR contact OR absorption) AND (effect\* OR impact\* OR outcome\* OR consequence\* OR result\* OR association OR correlation))

REFINED SEARCH:

Subject Terms: toxicology, health aspects, environmental health, public health

Publication Type: Journal Article, Review Article

Language: English

Publication Year: 2000-current

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GREY LITERATURE SEARCHES

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1. Google Scholar Advanced Search

- Include: microplastics health human

- Exclude: plants animals fish marine

- Publication years: 2000-2025

- File type: PDF

2. WHO Documents Database

- Terms: microplastics, plastics, pollution, health

3. EPA Documents & Reports

- Terms: microplastics, plastics, environment, human health

4. OECD Environmental Reports

- Terms: plastic pollution, microplastics, toxicity

5. Dissertation Databases (ProQuest, OpenThesis)

- Keywords: microplastics, health, exposure, toxicity

6. Conference Proceedings

- SETAC, ISEE, ISES conferences

- ISTH, SEA conference proceedings

7. PrePrint Servers

- bioRxiv, medRxiv, arXiv

- Search terms: microplastics health human

HANDSEARCHING

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- Scanning reference lists of included studies

- Review articles on microplastics (2022-2025)

- Citation tracking of key studies

- Expert consultation references

CITATION SEARCHES

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- Key papers: Identification and tracking via Google Scholar

- Study authors: Works cited by included studies

- Update searches every 6 months during review

DUPLICATE REMOVAL

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1. Title/author comparison

2. Abstract comparison

3. Full text review for suspected duplicates

4. Automated deduplication tools (EndNote, Zotero)

5. Manual verification of remaining records

SEARCH LIMITATIONS

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- English language only

- Publication years 2000-2025

- Human health focused

- Excluded preclinical animal studies

- Excluded plant-only studies

SEARCH VALIDATION

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- Sensitivity analysis: Parallel search by second researcher

- Known reference inclusion verification

- Kappa coefficient for agreement measurement

SEARCH UPDATE PLAN

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- Monthly monitoring during review

- Final update 24 months post-protocol registration

- Alert services setup for new publications

- Annual updates for systematic search re-run

EXPORT FORMAT

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- RIS format from all databases

- Import to reference management software

- Duplicate removal prior to screening

- Study data export with full text availability

SEARCH DATE SUMMARY

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Initial Search Date: September 2025

Final Update Search Date: March 2026

Total Searches: 9 databases + grey literature

Search Strings Developed By: Senior team members

Peer Review: Independent methodologist

Agreed Upon: Full research team consensus