

Metformin - Alzheimer's disease - India (Repurposing Scan)

Report ID: REP-20251216-368cf6
Generated At: 2025-12-16T08:27:49.651184
Format: pdf

Executive Summary

- Recent evidence from preclinical and clinical studies suggests metformin has potential neuroprotective effects in Alzheimer's disease, including enhancing neurogenesis, reducing amyloid beta deposition, and modulating neuroinflammation. Metformin's mechanisms possibly involve improved insulin signaling and anti-inflammatory pathways. Observational studies link metformin with reduced dementia risk, and novel delivery approaches are being explored. Guidelines currently do not specifically recommend metformin for Alzheimer's but authoritative sources provide general disease management guidance. Recent news highlights ongoing research into metformin's brain effects and potential benefits against dementia, including relevant findings in India.

Clinical Trials

Summary

- Active trials: 0
- Completed trials: 0
- Phase distribution: Phase I (0) Phase II (0) Phase III (0)

Highlights

- No Phase III trials identified in India

Top Trials

Trial ID	Title	Phase	Status	Locations	Start Date
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Guidelines and Literature

Guidelines

- WHO Guidelines:** Generic authoritative health guideline source (disease-specific guideline not mapped in MVP).

- **NICE Guidelines:** Generic authoritative guideline repository (disease-specific guidance not mapped in MVP).

Publications

- **PMID 39850274 (2024):**
- **PMID 39716328 (2024):**
- **PMID 39696300 (2024):**
- **PMID 39686618 (2025):**
- **PMID 39639832 (2025):**
- **PMID 39603510 (2025):**
- **PMID 39585487 (2024):**
- **PMID 39493064 (2024):**
- **PMID 39447310 (2025):**
- **PMID 39441380 (2024):**

Repurposing Options

- **Targeted subgroup usage**

Rationale: Recent evidence from preclinical and clinical studies suggests metformin has potential neuroprotective effects in Alzheimer's disease, including enhancing neurogenesis, reducing amyloid beta deposition, and modulating neuroinflammation. Metformin's mechanisms possibly involve improved insulin signaling and anti-inflammatory pathways. Observational studies link metformin with reduced dementia risk, and novel delivery approaches are being explored. Guidelines currently do not specifically recommend metformin for Alzheimer's but authoritative sources provide general disease management guidance. Recent news highlights ongoing research into metformin's brain effects and potential benefits against dementia, including relevant findings in India.

Evidence: WHO Guidelines, NICE Guidelines

Risks and Gaps

- Limited late-stage clinical evidence
- Geography-specific data gaps for India

References

- **Guideline:** WHO Guidelines — <https://www.who.int/publications/guidelines>
- **Guideline:** NICE Guidelines — <https://www.nice.org.uk/guidance>
- **Publication:** PMID:39850274 — <https://pubmed.ncbi.nlm.nih.gov/39850274/>
- **Publication:** PMID:39716328 — <https://pubmed.ncbi.nlm.nih.gov/39716328/>
- **Publication:** PMID:39696300 — <https://pubmed.ncbi.nlm.nih.gov/39696300/>
- **Publication:** PMID:39686618 — <https://pubmed.ncbi.nlm.nih.gov/39686618/>
- **Publication:** PMID:39639832 — <https://pubmed.ncbi.nlm.nih.gov/39639832/>

- **Publication:** PMID:39603510 — <https://pubmed.ncbi.nlm.nih.gov/39603510/>
- **Publication:** PMID:39585487 — <https://pubmed.ncbi.nlm.nih.gov/39585487/>
- **Publication:** PMID:39493064 — <https://pubmed.ncbi.nlm.nih.gov/39493064/>
- **Publication:** PMID:39447310 — <https://pubmed.ncbi.nlm.nih.gov/39447310/>
- **Publication:** PMID:39441380 — <https://pubmed.ncbi.nlm.nih.gov/39441380/>

Warnings

- **FTO requested but not executed in MVP**
- **Supply view requested but not executed in MVP**