PAHLÉ INDIA FOUNDATION
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i-LEAP
India-Lead Elimination Action Partnership
Promoted by Pahle India Foundation

# Scale and Sources of Lead Exposure in India

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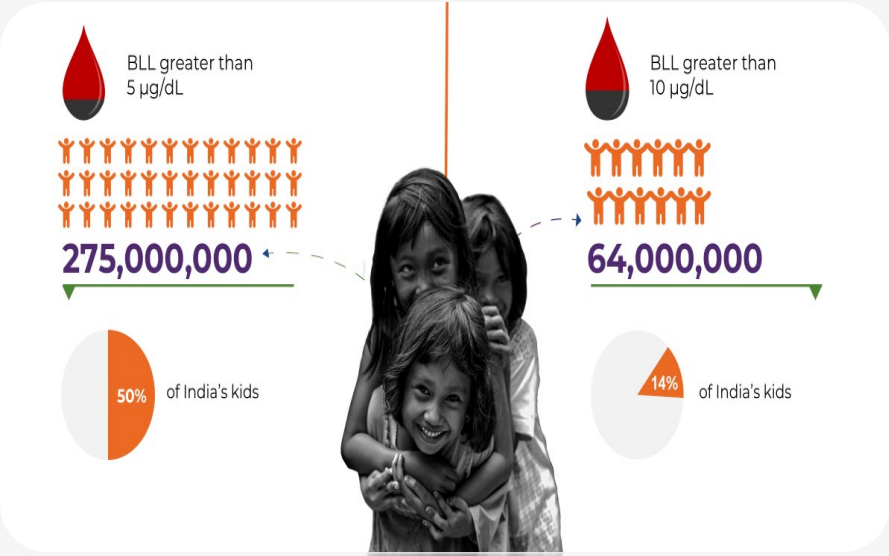
# Lead Poisoning in India

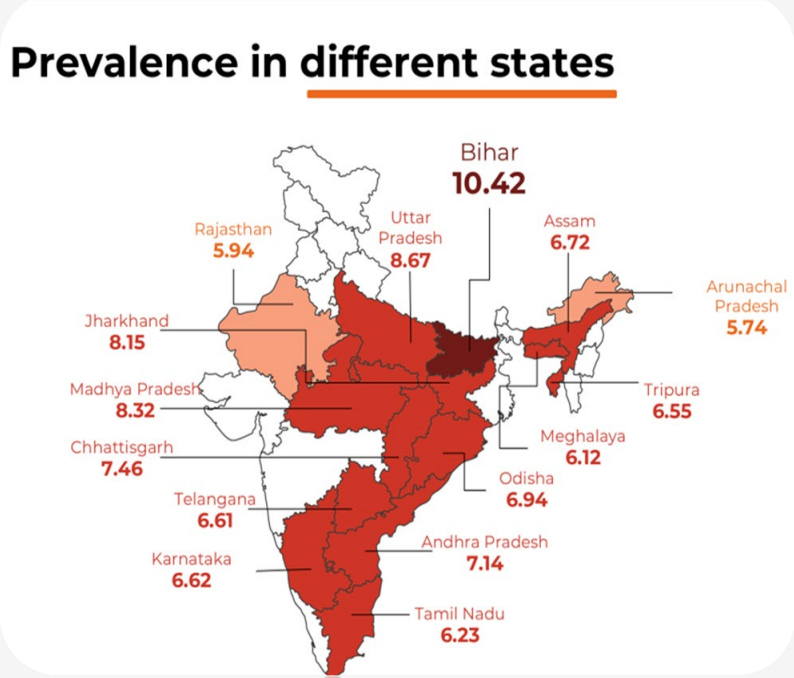
51% percent of Indian children have high blood lead levels (BLLs) > 5 µg/dL

(The Toxic Truth, UNICEF-Pure Earth, 2020)



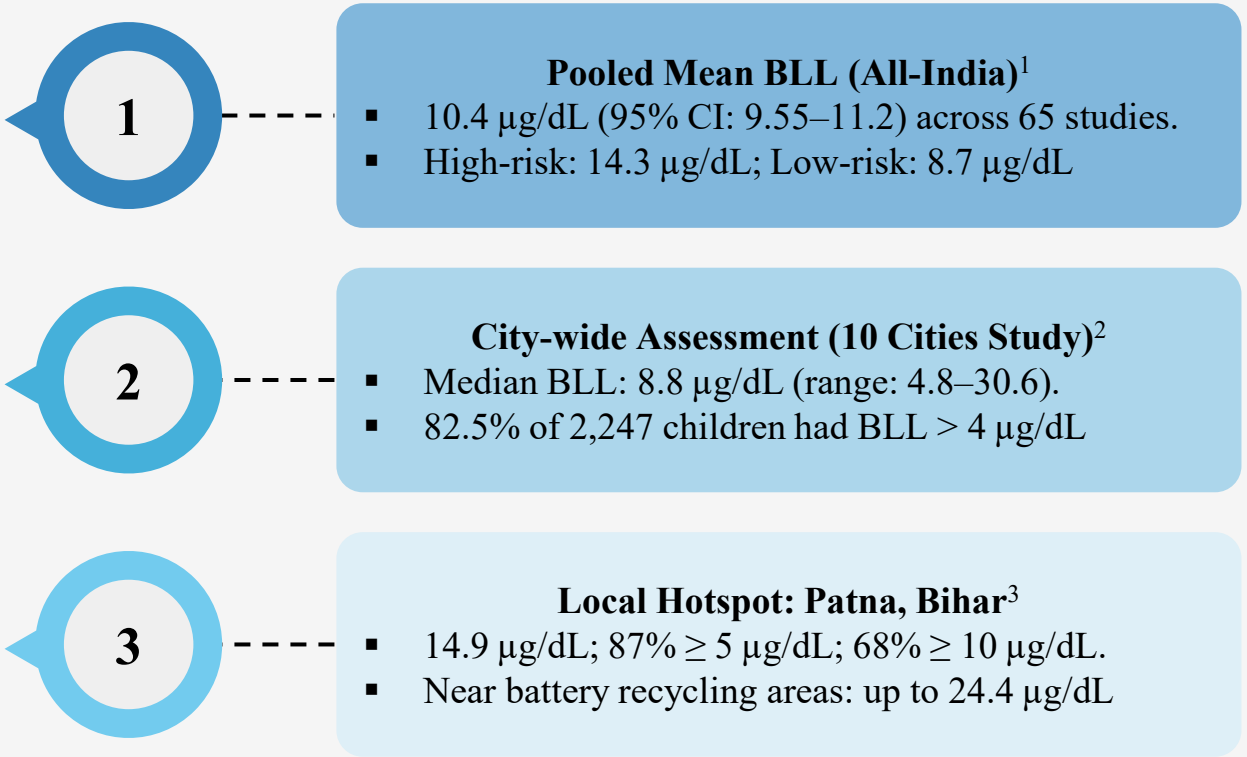

Source: IHME Estimates

Average BLLs in 23 states in India are well above 5 µg/dL




CSIR-NEERI Report 2022

# Blood Lead Levels in Indian Children





Source:

1. Upadhyay, K., et al. Estimation of the Pooled Mean Blood Lead Levels of Indian Children: A Systematic Review and Meta-Analysis. PubMed, 2024. https://pubmed.ncbi.nlm.nih.gov/40104047/.
2. Kumar, Divas, et al. Assessment of Blood Lead Level of School Children in 10 Cities of India: A Cross-Sectional Study. ResearchGate, 2023. https://www.researchgate.net/publication/375278739.
3. Brown, Mary Jean, et al. Prevalence of Elevated Blood Lead Levels among Children in Patna, Bihar: A Cross-Sectional Study. PLoS Global Public Health, 2022. https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0000743

# Health Impact and National Burden

1

**Cognitive Damage**[1]

- BLLs of ~7 µg/dL associated with IQ loss of 4–7 points.

2

**India's Burden in 2019**[2]

- 232,510 deaths and 6.98 million DALYs due to lead exposure.

3

**South Asia leads in global burden**[3]

- India among top 5 countries in age-standardized DALYs.


Source:

1. Ericson, Bret, et al. IQ Loss and Economic Burden Due to Lead Exposure in Low- and Middle-Income Countries. Environment International 120 (2018): 1–9. https://doi.org/10.1016/j.envint.2018.08.047.
2. Ericson, Bret, et al. Global Burden of Disease Due to Lead Exposure in 2019. Toxics 9, no. 11 (2021): 301. https://doi.org/10.3390/toxics9110301.
3. Prasad, Vandana, et al. Age-Standardized Mortality and DALY Rates Due to Lead Exposure in South Asia: Insights from the Global Burden of Disease Study. BMC Public Health 22, no. 1 (2022). https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15874-7.

# Sources of Lead Poisoning

## Household Sources

- Lead-Based Paint and Household Dust
- Ceramics, Cookware, and Utensils
- Cosmetics (e.g., sindoor, kohl/kajal)
- Toys and Jewellery
- Spices and Herbal Remedies

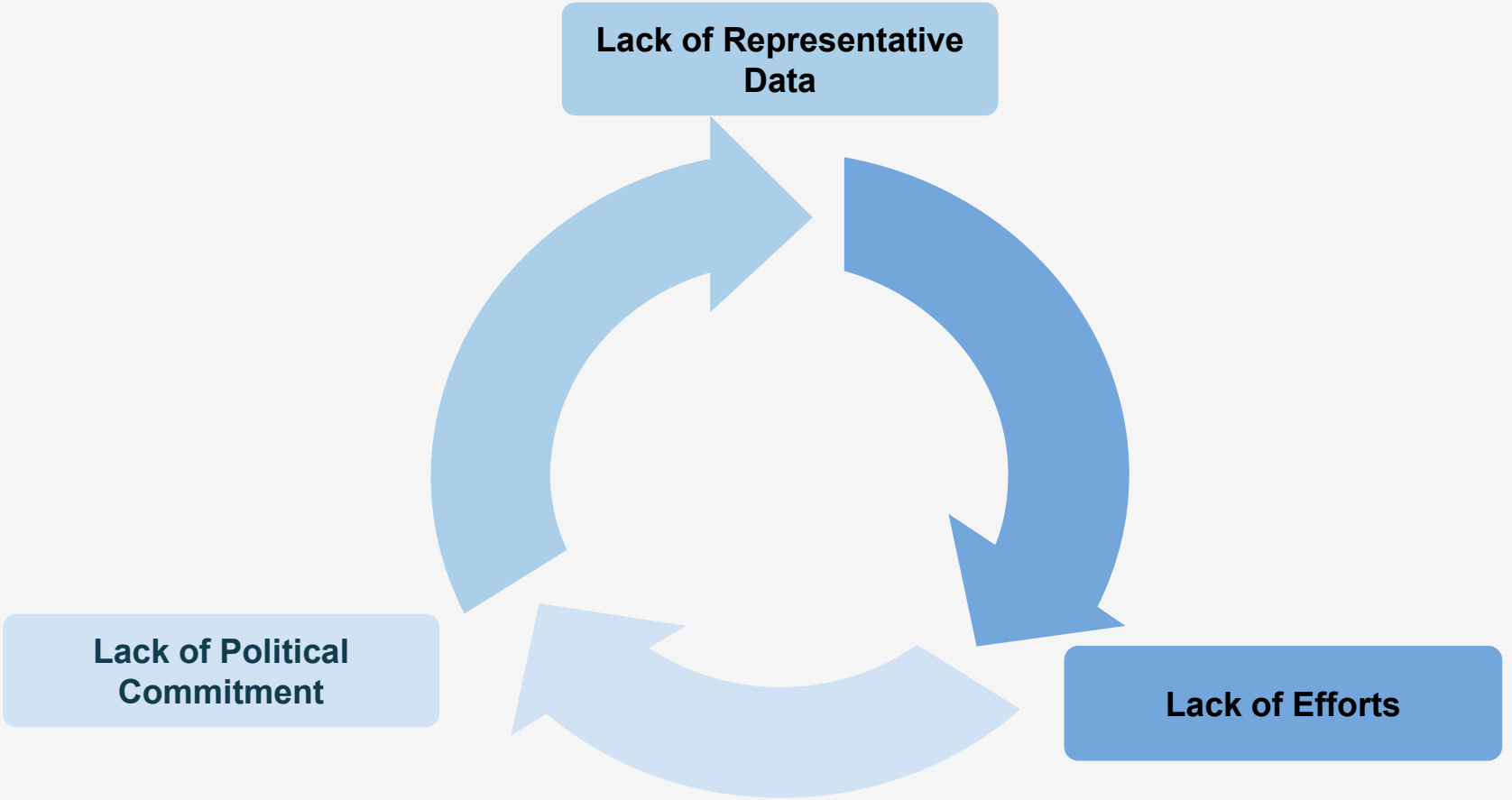
## Environmental Sources

- Soil
- Water
- Atmospheric Deposition - Industrial emissions and lead smelting contribute to air pollution and settle on soil, crops, and surfaces.

## Occupational Sources

- Battery Recycling (Informal/Small-Scale)
- Mining and Smelting
- Construction, Demolition, and Renovation Work
- Metalworking, Radiator Repair, Shipbuilding

# Policy Challenges



# Thank You!