

GEM PATIENT EDUCATION CENTER

Industrialization, Environmental Pollution & Endometriosis

Version 1.3 · Reviewed 13 September 2026

What the evidence suggests – and what is still unproven

WHAT CURRENT EVIDENCE SUPPORTS

Endometriosis is a complex disease shaped by genetic, hormonal, immune and inflammatory factors. Environmental exposures – particularly some endocrine-disrupting chemicals such as dioxins, PCBs, bisphenols and phthalates – are being investigated because they may influence hormone signaling, inflammation, oxidative stress and gene regulation. Several studies report associations with endometriosis, but the evidence is **not sufficient to conclude that industrialization or pollution causes the disease, determines its severity, or explains geographic clusters.**

Corrected conceptual infographic



HOW TO READ THE RESEARCH MODEL

The infographic proposes questions for research: measure exposures, assess biological pathways, define disease accurately and account for bias. It does not establish that pollution causes an individual's endometriosis or that any named city has a greater disease burden because of pollution.

Evidence & references

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Associations do not establish causation

Reviews report associations for selected endocrine-disrupting chemicals, but study designs, timing of exposure measurement, selection and confounding limit inference. Reviews reach differing assessments of the overall strength of evidence.

Model and reference identity

The retained image proposes research steps, not city-specific proof. Vallee et al. is a narrative review published in the 2024 issue (online 2023); Sirohi et al. is a systematic literature review in the 2021 issue (online 2020). Neither establishes an individual cause.

Full references

- **[R35667590]** Coiplet E, Courbiere B, Agostini A et al. Endometriosis and environmental factors: A critical review. J Gynecol Obstet Hum Reprod. 2022;51(7):102418. doi:[10.1016/j.jogoh.2022.102418](https://doi.org/10.1016/j.jogoh.2022.102418). PMID [35667590](https://pubmed.ncbi.nlm.nih.gov/35667590/). Freely available
- **[R35565013]** Wieczorek K, Szczęśna D, Jurewicz J. Environmental Exposure to Non-Persistent Endocrine Disrupting Chemicals and Endometriosis: A Systematic Review. Int J Environ Res Public Health. 2022;19(9):5608. doi:[10.3390/ijerph19095608](https://doi.org/10.3390/ijerph19095608). PMID [35565013](https://pubmed.ncbi.nlm.nih.gov/35565013/). Freely available
- **[R33042729]** Upson K. Environmental risk factors for endometriosis: A critical evaluation of studies and recommendations from the epidemiologic perspective. Curr Epidemiol Rep. 2020;7(3):149-170. doi:[10.1007/s40471-020-00236-3](https://doi.org/10.1007/s40471-020-00236-3). PMID [33042729](https://pubmed.ncbi.nlm.nih.gov/33042729/). Freely available
- **[R37814514]** Vallée A, Ceccaldi PF, Carbonnel M et al. Pollution and endometriosis: A deep dive into the environmental impacts on women's health. BJOG. 2024;131(4):401-414. doi:[10.1111/1471-0528.17687](https://doi.org/10.1111/1471-0528.17687). PMID [37814514](https://pubmed.ncbi.nlm.nih.gov/37814514/). Freely available
- **[R32903210]** Sirohi D, Al Ramadhani R, Knibbs LD. Environmental exposures to endocrine disrupting chemicals (EDCs) and their role in endometriosis: a systematic literature review. Rev Environ Health. 2021;36(1):101-115. doi:[10.1515/reveh-2020-0046](https://doi.org/10.1515/reveh-2020-0046). PMID [32903210](https://pubmed.ncbi.nlm.nih.gov/32903210/). Freely available
- **[RESHRE]** Becker CM, Bokor A, Heikinheimo O, et al. ESHRE guideline: endometriosis. Human Reproduction Open. 2022;2022(2):hoac009. doi:[10.1093/hropen/hoac009](https://doi.org/10.1093/hropen/hoac009). Freely available

No listed institution endorses GEM.

Medical information

Do not delay care; seek emergency help for a suspected emergency.

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