International Journal of Socially Responsible and Sustainable Healthcare
Volume 2 • Issue 1 • January-December 2026

AI Data Centers, Water Use, and Maternal Health:

An Emerging Environmental Justice Issue for Pregnant and Lactating People

Daryl O. Traylor
http://orcid.org/0000-0002-8935-1653
Chamberlain University, USA

Eboni E. Anderson
http://orcid.org/0000-0001-7675-4528
AT Still University School of Osteopathic Medicine, USA
Received: February 28th, 2026 | **Accepted:** March 10th, 2026

ABSTRACT

Artificial intelligence (AI) data centers are an underrecognized health concern because their rapid growth increases demand for water-intensive cooling and electricity. This narrative review examines AI data-center water use as an upstream determinant of health for pregnant, postpartum, and lactating people. It synthesizes evidence across infrastructure, environmental health, and maternal-child-health literatures to identify plausible pathways and policy implications. A structured search found that data centers can require water, while pregnancy and lactation heighten vulnerability to dehydration and heat, and household water insecurity is linked to poorer health outcomes. Although no direct epidemiologic studies connect AI data-center water use to maternal or infant outcomes, evidence supports pathways through water insecurity, dehydration, thermal strain, hygiene constraints, stress, and cumulative burden, especially in drought-prone settings. AI infrastructure should be included in environmental and maternal-child health surveillance using a precautionary public health approach.

KEYWORDS

Artificial Intelligence, Data Centers, Water Insecurity, Pregnancy, Lactation, Maternal Health, Environmental Justice, Heat Vulnerability

INTRODUCTION

The term Artificial Intelligence (AI) data centers denotes data-center facilities and computing clusters that support artificial intelligence training and inference at industrial scale. They differ from more conventional digital infrastructure in a practical sense because AI workloads are becoming a major driver of data-center electricity demand, and the resulting thermal burden makes cooling systems a central operational concern rather than a secondary one (de Vries-Gao, 2026; Mytton, 2021). That distinction matters for environmental health because the physical infrastructure behind AI is not only energy intensive, but also materially dependent on local water systems that absorb the cooling demands created by concentrated computing loads (de Vries-Gao, 2026; Mytton, 2021).

DOI: 10.4018/IJSRSH.405512

Water use is therefore the most relevant exposure for the present review. Data-center water demand includes direct on-site consumption for cooling as well as indirect water use embedded in electricity generation, both of which can become locally significant when facilities are large, numerous, or located in water-stressed regions (de Vries-Gao, 2026; Mytton, 2021). Existing reporting practices also make this exposure difficult to evaluate with precision, because industry disclosures often do not distinguish AI from non-AI workloads and water reporting remains incomplete across operators (de Vries-Gao, 2026; Mytton, 2021). From a public-health perspective, that lack of transparency is not a minor technical problem. It limits the ability of researchers, regulators, and affected communities to assess whether industrial water demand is competing with domestic needs, particularly during periods of scarcity (de Vries-Gao, 2026; Mytton, 2021).

This question becomes more urgent when viewed through the physiology and lived realities of pregnancy and lactation. Pregnancy and lactation are periods of increased water requirement, and population-based data suggest that many pregnant and breastfeeding individuals do not consistently reach recommended fluid intakes even under ordinary conditions (Bardosono et al., 2016). Recent interdisciplinary scholarship has further emphasized that pregnancy, postpartum recovery, and lactation require greater access to hydration and cooling resources than many other life stages, making these periods especially sensitive to water insecurity and heat stress (Howells et al., 2025). The health stakes are not abstract. In a large systematic review and meta-analysis, higher ambient temperatures during pregnancy were associated with increased risks of preterm birth, lower birth weight, and stillbirth, with the burden falling most heavily on people in socially and economically vulnerable circumstances (Chersich et al., 2020). At the same time, evidence from maternal health research shows that inadequate household water and sanitation are linked to adverse maternal and newborn outcomes through multiple pathways that include infection risk, hygiene constraints, and reduced environmental safety during pregnancy and childbirth (Cameron et al., 2021).

The novelty of this review lies in bringing these literatures into direct conversation. Discussions of AI infrastructure typically center on innovation, energy demand, and carbon emissions, while maternal and infant health scholarship has more often examined water insecurity, sanitation, and climate-related heat as distinct exposures. Linking AI-driven data-center water demand to these established determinants of maternal and infant health makes it possible to treat digital infrastructure as a public-health issue, not simply a technological or economic one (Cameron et al., 2021; de Vries-Gao, 2026; Howells et al., 2025). Against that background, this review asks: How might AI data-center water demand function as an environmental determinant of health for pregnant and lactating people, and what policy responses are warranted? This review does not argue that AI data centers have been shown to cause adverse maternal or infant outcomes. Rather, it examines whether a rapidly expanding, water-intensive form of digital infrastructure may contribute to health risk through established pathways that connect water stress, household water insecurity, heat vulnerability, and reproductive health. The purpose is to define a plausible public-health concern, clarify the relevant mechanisms, and identify priorities for surveillance, prevention, and future research.

Accordingly, the argument advanced here is explicitly conceptual and precautionary rather than causal. This manuscript does not posit AI infrastructure as a newly isolated obstetric exposure in the same sense as a toxicant-specific epidemiologic literature, nor does it claim that existing studies have already demonstrated measurable pregnancy effects in communities surrounding data centers. Rather, it asks whether AI-related water demand may intensify conditions that reproductive-health literature already recognizes as consequential during pregnancy, postpartum recovery, and lactation, including reliable hydration, thermal protection, domestic hygiene, and caregiver capacity. It is also important to acknowledge a geographic asymmetry in the present evidence base. Much of the strongest maternal water-insecurity literature comes from low- and middle-income settings, whereas much of the infrastructure and siting literature comes from the United States and other high-income regions where AI data-center buildout is especially rapid. That asymmetry narrows direct inference, but it does not negate the pathway-based argument; instead, it identifies precisely where place-based

Related Content