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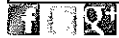
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Nitrates in mom's drinking water linked to birth defects in kids.

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JD Brender, JD, PJ Weyer, PA Romitti, BP Mohanty, MU Shinde, AM Vuong, JR Sharkey, D Dwivedi, SA Horel, J Kantamneni, JC Huber Jr., Zheng, Q, MM Werler, KE Kelley, JS Griesenbeck, FB Zhan, PH Langlois, L Suarez, MA Canfield and the National Birth Defects Prevention Study. **Prenatal nitrate intake from drinking water and selected birth defects in offspring of participants in the National Birth Defects Prevention Study.** Environmental Health Perspectives. <http://dx.doi.org/10.1289/ehp.1206249>.

Synopsis by [EHN Staff](#)

Babies whose mothers consume nitrates in drinking water have a higher risk of spina bifida, cleft palate and other birth defects, according to a large study of children in Texas and Iowa. Used as fertilizers on crops, nitrates are one of the most widespread chemical contaminants in aquifers around the world. The study is the first to compare birth defects in kids to their mothers' consumption of nitrates-tainted drinking water during pregnancy.

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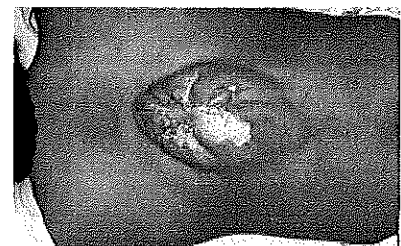
Babies whose mothers consume nitrates in drinking water have a higher risk of spina bifida, cleft palate and other birth defects, according to a large study of children in Texas and Iowa. Used as fertilizers on crops, nitrates are one of the most widespread chemical contaminants in aquifers around the world.

The study is the first to compare birth defects in kids to their mothers' consumption of nitrates-tainted drinking water during pregnancy. Previous epidemiological studies have linked prenatal exposure to birth defects. But those studies were based solely on the nitrate levels in the women's drinking water. The new study evaluated the amounts and sources of the water consumed by the mothers.

Women whose babies were born with neural tube defects, limb deformities and oral cleft defects "were significantly more likely than control mothers to ingest 5 mg or more of nitrate per day from drinking water," wrote the researchers, whose study was published in Environmental Health Perspectives.

Mothers of babies with spina bifida, a disorder where the embryonic neural tube does not fully close, were twice as likely to ingest at least 5 milligrams of nitrate daily from drinking water than mothers in the control group. From one month preconception through the first trimester, mothers of children with limb deficiencies, cleft palate and cleft lip were, respectively, 1.8, 1.9 and 1.8 times more likely than control group mothers to ingest at least 5.42 milligrams of nitrate daily.

The federal standard for drinking water is 10 milligrams per liter for nitrate/nitrogen or 45 milligrams per liter for total nitrate.



National Institutes of Health

Spina bifida is one of numerous birth defects associated with a pregnant woman's consumption of nitrates-contaminated water.

In this study, the researchers studied 3,300 mothers from Iowa and Texas whose babies were born with neural tube defects, oral cleft, limb deficiency or congenital heart defects. They compared them to a control group of 1,121 mothers who lived in the study area and had babies without any major congenital malformations.

The mothers were questioned about their personal water use, including whether their water was private well water, unfiltered tap, filtered tap, bottled or other. Researchers asked about the quantity of water consumed at home and at work or at school on an average day. The researchers then estimated daily nitrate consumption.

Private well water contains the highest concentrations of nitrates. Estimated median levels in the study area for bottled water, public water supplies and private wells were 0.33, 5.0, and 17.6 mg/L, respectively.

Nitrate intake did not increase associations between the use of amine- and amide-containing drugs and birth defects. This is in contrast to a previous study linking these drugs to neural tube defects in Mexican-Americans.

Since nitrate contamination occurs in conjunction with other water contaminants, the researchers suggested that future studies of birth defects could look at prenatal exposure to mixtures of contaminants in drinking water.



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8 January **[EPA report finds pesticide poses risks to workers, spurs calls for ban](#)**. An insecticide used on corn and other U.S. crops poses health risks to workers who mix and apply it and also can contaminate drinking water, according to a U.S. Environmental Protection Agency report released this week. [Environmental Health News](#).

30 December **[PCBs cause fish consumption advisory for catfish from Susquehanna River](#)**. Pennsylvania officials issued a consumption warning for channel catfish longer than 20 inches. Samples of the fish showed unacceptable levels of polychlorinated biphenyls, often called PCBs. [Lancaster Intelligencer Journal](#), Pennsylvania.

23 December **[New study links air pollution to congenital effects](#)**. Researchers at Tel Aviv University have discovered new evidence linking high exposure of air pollution to an increased risk of congenital malformations. [Science World Report](#).

19 December **[Consumer group: Potentially dangerous Christmas decorations sold at six major retailers](#)**. An environmental advocacy group is calling on several major retailers to evaluate potential hazards in holiday decorations after a study raised questions about chemicals in light strings, garland and other items. [Cleveland News Channel 5](#), Ohio.

18 December **[Couple fined for selling inflatable toy dolphins containing chemicals linked to cancer and birth defects](#)**. C&Q Trading Ltd, run by married couple Jianxin Chen and Chen Qi Zhou, was found stocking inflatable dolphins with dangerous levels of phthalates – which can be harmful if ingested over a period of time. [Manchester Evening News](#), United Kingdom.

17 December **[Is fracking polluting the air?](#)** Toxic air pollution from fracking causes a wide spectrum of health problems for Americans across the country, an environmental group charged in a report released Tuesday. [Newark Advocate](#), Ohio.

16 December **[Another 3,234 reasons to avoid tanning beds](#)**. Everyone knows, or should know, by now that tanning beds expose users to a lot of ultraviolet radiation, which can cause cancer. But according to a new study released Monday, indoor tanning also is responsible for an average of 3,234 injuries that result in visits to hospital emergency rooms each year. [Washington Post](#).

13 December **[National Institutes of Health ends longitudinal children's study](#)**. The US National Institutes of Health has cancelled its plan for an ambitious, multi-decade study of environmental influences on children's health, agency director Francis Collins announced on 12 December. [Nature](#).

11 December **[Prenatal exposure to common chemicals linked to lower IQ in children](#)**. Two chemicals found in a number of common consumer products may be damaging to fetal development and could even lower children's IQs, according to a new study by researchers at Columbia University's Mailman School of Public Health in New York City. [60 Minutes CBS News](#).

11 December **[Govt ignoring children with deformities](#)**. In a clear case of ignorance and insensitivity of Punjab government, Teja Ruhela - a small village situated close to the Pakistan border - infamous for children being with deformities like cerebral palsy, visual and hearing impairment, among others does not have a single healthcare facility. [Times of India](#), India.

7 December **[Lehigh Valley artificial turf debate: Is it safe for children?](#)** Lately, a groundswell of concern has developed over what health hazards, if any, might lurk on and beneath the synthetic fibers in artificial turf surfaces, particularly those that incorporate the use of tiny bits of rubber ground up from vehicle tires. [Allentown Morning Call](#), Pennsylvania.

7 December **[Experts disagree over safety of children's toys](#)**. A study published online Monday by the journal Pediatrics found that from 1990 through 2011, nearly 3.3 million children were treated in U.S. emergency rooms for toy-related injuries. And lab tests continue to reveal some toys have dangerous levels of toxicants. [Philadelphia Inquirer](#), Pennsylvania.

6 December **[Study links fracking to infertility, miscarriages, birth defects](#)**. A new study links shale oil and gas development to a host of developmental and reproductive health risks, and says the processes involved - including hydraulic fracturing, or fracking - pose a particularly potent threat to what researchers called "our most vulnerable population." [US News & World Report](#).

5 December **[Study: Fracking chemicals pose potential health threat to children and mothers](#)**. Chemicals from fracking pose "serious health risks" to pregnant women, babies, and children, a new study has claimed. [BusinessGreen](#), United Kingdom.