

# Kids living near Colorado airports have slightly elevated levels of lead in their blood, new study finds

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Children living near small airports in Colorado had slightly higher levels of lead in their blood than the statewide average, according to a new

study—though experts had diverging opinions on how significant that difference was.

The study, by the Colorado Department of Public Health and Environment, found levels to be within the range the [federal government](#) considers normal, and didn't prove that living near an airport caused the increase in [blood lead levels](#), though levels declined consistently as the distance from an airport increased, reaching the state average at about two miles out.

The researchers also didn't have enough blood samples to show whether lead levels were particularly high near any of the airports, though the data didn't suggest any difference, said Dr. Ned Calonge, the department's chief medical officer.

While lead can affect anyone, [young children](#) are most vulnerable. In most cases, lead doesn't cause any immediately noticeable symptoms, though over time it lowers intelligence scores and increases the risk of hyperactivity and behavior problems. Children experiencing acute lead poisoning, which is rare, may have headaches, stomach pain and weakness.

Aircraft fuel is the largest source of new lead pollution in the country, according to the U.S. Environmental Protection Agency. Certain industries, like battery recycling, also generate lead pollution, while contamination from lead paint and leaded gas still lingers.

Children living within half a mile of a small airport had about 2.29 micrograms of lead in each deciliter of their blood, while all kids who've gotten tested statewide averaged 2.08 micrograms per deciliter, Calonge told Westminster's City Council in March.

Residents of Westminster and other communities around Rocky

Mountain Metropolitan Airport, which was one of 12 airports included in the study, have raised concerns about lead pollution and what they say is excessive noise from pilot training at the airport, and both local governments and homeowners have sued Jefferson County over the airport.

Rocky Mountain Metropolitan Airport announced last year that it will switch to unleaded gasoline by 2027, a move that would significantly reduce [lead pollution](#). A federal mandate will require all airports to make the shift by 2030.

The additional lead exposure the study found isn't likely to be clinically significant, said Gabriel Filippelli, a professor and executive director of Indiana University's Environmental Resilience Institute. Also, comparing one area to the statewide average may not be useful, he said—children in cities, for example, will always have higher levels of lead in their blood than those who don't live with accumulated pollution from industry and heavy vehicle traffic.

"The difference between 2.29 (micrograms per deciliter) and 2.08 (micrograms per deciliter) is quite small, and for issues of lead exposure and treatment we typically focus on larger differences," he said.

The study didn't examine soil around children's homes, so state health officials can't be certain that the lead exposure came from burning aviation fuel, Calonge said. Homes near airports might be more likely to have lead paint or lead pipes, or parents might inadvertently bring lead home from their jobs, he said.

## **Below the CDC's 'reference level'**

All of the groups of children in the study had average blood lead levels below the Centers for Disease Control and Prevention's "reference level"

of 3.5 micrograms per deciliter, which itself is lower than levels in kids from older generations, Calonge said. Blood lead levels began dropping after the United States banned lead paint and leaded gas for cars.

"We've taken the major sources (of lead) out of our environment," he said.

The reference level isn't a measure of when lead becomes damaging, though; no amount of lead is safe for a developing brain, said Sammy Zahran, a professor at Colorado State University who has studied blood lead levels around airports in other states. The cutoff just exists to determine which kids have above-average exposure, so public health can focus on those at the highest risk, he said.

Children who have 3 micrograms per deciliter in their blood score about one point lower on [intelligence tests](#), on average, than those who have 2 micrograms, Zahran said. When kids continue to have lead exposures over a prolonged period, the damage adds up, to the point that they have worse scores on college entrance tests and tend to earn less in adulthood, he said.

"The cutoff is a statistical, not a medical, standard," Zahran said.

While no blood lead level is safe, per se, getting children's levels down to zero isn't realistic, Calonge said. Almost all soil in Colorado contains some amount of lead because of the state's mining history, he said, so families should take precautions like covering any bare soil with grass, removing shoes when coming inside, washing children's toys to remove dust and mopping frequently.

"If you look for (lead), you'll find it," he said. "We will never get to zero" lead exposure.

The state health department doesn't have the power to regulate soil in the way it does air and water, so the agency doesn't do routine testing for lead in the dirt, Calonge said. If more children get blood tests for lead, the state will have a better idea where exposures are happening and can focus on fixing them, he said.

"We believe the best approach to lead is to look at (blood) serum levels to find where the hotspots are and focus on remediation," he said.

Lead-based paint remains the biggest source of exposure in Colorado, Calonge said. Children also are exposed to lead by drinking unfiltered water distributed through lead pipes, eating off certain glazed pottery, or ingesting some supplements or imported spices, he said.

Airports can be particularly dangerous, though, because lead continues to build up in the environment for as long as the airplanes operate with leaded fuel, Zahran said. The airports have value, but communities have to weigh that against effects on children living near them now, and those who will in the future, he said.

"Society-wide, it's a forfeiture of about \$1 billion per year" in exposed children's adult earnings, Zahran said.

## **Not enough testing of kids' blood**

The study used existing blood lead tests on people under 18, then adjusted for whether children live downwind from an [airport](#), the time of year (blood lead levels peak in warmer months, when children are playing outside), the percentage of homes old enough to have lead paint and the kids' demographic information.

The researchers had to aggregate information from all airports and age groups because so few kids have gotten tested, Calonge said.

The study looked at children living near Centennial and Rocky Mountain Metro, as well as Vance Brand in Longmont, Boulder Municipal, Buckley Space Force Base, Colorado Springs Municipal, Erie Municipal, Glenwood Springs Municipal, Greeley Weld County, Lake County, Montrose Regional and Rifle Garfield County airports.

Colorado law requires providers to test Medicaid-eligible children for lead in their blood around their first and second birthdays, but only about 23% of those kids and 7% of all children under the age of 6 received even one blood test in 2022. Kids who aren't Medicaid-eligible can get a test if they live in a home that could have [lead paint](#) or some other risk factor.

Calonge said he's not certain why providers aren't testing children, but it could reflect that the CDC used to set a higher reference level, which kids in Colorado rarely met.

"I will admit a bit of discouragement" with the level of testing, he said.

Not all families have a doctor they regularly see who would ensure their children get lead testing, and sometimes it's not a priority to take a toddler to a lab for a blood draw, said Dr. Cassie Littler, a pediatrician in Denver. That said, some offices likely are testing their patients, but don't send the results to the state if they process the test internally, she said.

Doctors don't have any medical treatments to offer for elevated blood levels, except in extreme cases, Littler said. So when a blood lead level comes back elevated, or even at the high end of normal, the key is to work with the family to prevent future exposure, she said.

Lead gradually moves from the blood into the bones, where it typically doesn't cause too much trouble. It can reenter the blood when a person's bone density starts falling later in life, but the effects on older people

aren't as well-studied as those on children.

"The biggest thing is to try to figure out where it's coming from," she said. "We want to make sure it doesn't go any higher."

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