- Vision

Air pollution a risk to eyesight of children, scientists find

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AIR pollution is harming children's eyesight, warns a new study by Birmingham scientists.
Exposure to lower levels of air pollutants is linked to how well children can see without glasses, say researchers at the University of Birmingham.
Their findings show that pollution in the air may be harming youngsters' eyesight with cleaner air helping to protect and even improve their vision.
The team discovered that exposure to lower levels of air pollutants - specifically nitrogen dioxide (NO2) and fine particulate matter (PM2.5) - is associated with how well children can see without glasses.
The study, published in the journal PNAS Nexus, suggests that reducing exposure to those pollutants could help slow the progression of short-sightedness.
Experts say that, while genetics and lifestyle factors play a major part in whether children have myopia, environmental factors such as air pollution also matter.
The research team examined how environmental, genetic, and lifestyle factors interact to influence children's vision development.
They discovered that children who lived in areas with cleaner air had better vision, after accounting for other factors.
The team found that primary school students are especially sensitive to air pollution - with younger children showing the greatest improvements when exposed to cleaner air.
In contrast, older students and those with high myopia were less affected by environmental changes, with their vision more influenced by genetic factors.
That suggests that early action can make a real difference.
Study co-supervisor Professor Zongbo Shi, from the University of Birmingham, said: "While genetics and screen time are long recognised as contributors to childhood myopia, this study is among the first to isolate air pollution as a meaningful and modifiable risk factor.
"Clean air isn't just about respiratory health - it's about visual health too. Our results show that improving air quality could be a valuable strategic intervention to protect children's eyesight, especially during their developmental years."
He says polluted air can cause inflammation and stress in the eyes, reduce sunlight exposure which is important for healthy eye development.
Prof Shi said it can also trigger chemical changes in the eye that lead to it changing shape, causing myopia.
The new study suggests that installing air purifiers in classrooms, creating "clean-air zones" around schools to reduce traffic pollution, and closing streets to cars during school drop-off and pick-up times all have the potential to improve eye health.