

Revealed: terrible birth defects in children of the Punjab linked to coal pollution



An Observer investigation has found a connection between a dramatic rise in sick children in the Indian state and emissions from power stations. Despite warnings from doctors, the government has refused to act. **Gethin Chamberlain reports from Bathinda**

Their heads are too large or too small, their limbs too short or too bent. For some, their brains never grew, speech never came and their lives are likely to be cut short: these are the children it appears that India would rather the world did not see, the victims of a scandal with potential implications far beyond the country's borders.

Some sit mutely, staring into space, lost in a world of their own; others cry out, rocking backwards and forwards. Few have any real control over their own bodies. Their anxious parents fret over them, murmuring soft words of encouragement, hoping for some sort of miracle that will free them from a nightmare.

Health workers in the Punjabi cities of Bathinda and Faridkot knew something was terribly wrong when they saw a sharp increase in the number of birth defects, physical and mental abnormalities, and cancers. They suspected that children were being slowly poisoned.

But it was only when a visiting scientist arranged for tests to be carried out at a German laboratory that the true nature of their plight became clear. The results were unequivocal. The children had massive levels of uranium in their bodies, in one case more than 60 times the maximum safe limit.

The results were both momentous and mysterious. Uranium occurs naturally throughout the world, but is normally only present in low background levels which pose no threat to human health. There was no obvious source in the Punjab that could account for such high levels of contamination.

And if a few hundred children – spread over a large area – were contaminated, how many thousands more might also be affected? Those are questions the Indian authorities appear determined not to answer. Staff at the clinics say they were visited and threatened with closure if they spoke out. The South African scientist whose curiosity exposed the scandal says she has been warned by the



The Lehra Mohabat power station, near Bathinda, spews out a toxic ash that is blamed for uranium pollution. Photographs by Gethin Chamberlain

authorities that she may not be allowed back into the country.

But an *Observer* investigation has now uncovered disturbing evidence to suggest a link between the contamination and the region's coal-fired power stations. It is already known that the fine fly ash produced when coal is burned contains concentrated levels of uranium and a new report published by Russia's leading nuclear research institution warns of an increased radiation hazard to people living near coal-fired thermal power stations.

The test results for children born and living in areas around the state's power stations show high levels of uranium in their bodies. Tests on ground water show that levels of uranium around the plants are up to 15 times the World Health Organisation's maximum safe limits. Tests also show that it extends across large parts of the state, which is home to 24 million people.

The findings have implications not only for the rest of India – Punjab produces two-thirds of the wheat in the country's central reserves and 40% of its rice – but for many other countries planning to build new power plants, including China, Russia, India, Germany and the US. In Britain, there are plans for a coal-fired station at the Kingsnorth facility in Kent.

The victims are being treated at the Baba Farid centres for special children in Bathinda – where there are two coal-fired thermal plants – and in nearby Faridkot. It was staff at those clinics who first voiced concerns about the increasing numbers of admissions involving severely handicapped children. They were being born with hydrocephaly, microcephaly, cerebral palsy, Down's syndrome and other complications. Several have already died.

Dr Pritpal Singh, who runs the Faridkot clinic, said the numbers of children affected by the pollution had risen dramatically in the past six or seven years. But he added that the Indian authorities appeared determined to bury the scandal. "They can't just detoxify these

kids, they have to detoxify the whole Punjab. That is the reason for their reluctance," he said. "They threatened us and said if we didn't stop commenting on what's happening, they would close our clinic.

"But I decided that if I kept silent it would go on for years and no one would do anything about it. If I keep silent then the next day it will be my child. The children are dying in front of me."

Dr Carin Smit, the South African clinical metal toxicologist who arranged for the tests to be carried out in Germany, said that the situation could no longer be ignored. "There is evidence of harm for these children in my care and... it is an imperative that their bodies be cleaned up and their metabolisms be supported to deal with such a devastating presence of radioactive material," she said.

"If the contamination is as widespread as it would appear to be – as far west as Muktsar on the Pakistani border, and as far east as the foothills of Himachal Pradesh – then millions are at high risk and every new baby born to a contaminated mother is at risk."

In the Faridkot centre last week, Harmanbir Kaur, 15, was rocking gently backwards and forwards. When her test results came back, they showed she had 10 times the safe limit of uranium in her body. Her brother, Naunihal Singh, six, has double the safe level.

Harmanbir was born in Muktsar, 25 miles from Faridkot. Her mother, Kulbir Kaur, 37, watched her slowly degenerate from a healthy baby into the girl she is today, dribbling constantly, unable to feed herself, lost in a world of her own. "God knows what sin I have committed. When we go to our village people say there is a curse of God on you, but I don't believe so," she said. "Every part of this area is affected. We never imagined that there would be uranium in our kids."

A few miles down the road in Bathinda, Sukhminder Singh, 48, a farmer, watched his son Kulwinder, 13, staring into space while curling his hands up under his chin. Tests showed Kulwinder has 19 times the maximum safe level of uranium in his body. He has cerebral palsy and has already had seven operations to unbend his arms and legs.

"The government should investigate it because if our child is affected it will also affect future generations," he said. "What are they waiting for? How many children do they want to be affected? Another generation? I can leave the house for work, but my wife is always with him. Sometimes she cries and asks why God is playing with our luck. Every morning he sends a new trouble."

Doni Choudhary, aged 15 months, is waiting to be tested, though staff say he shows similar symptoms to those who have tested positive and are treating him for suspected uranium poisoning. His mother, Neelum, 22, from the state capital, Chandigarh, says he was born with hydrocephaly. His legs are useless.

Gurpreet Singh, who has cerebral palsy and microcephaly, is from Sirsar, 30 miles from Bathinda. His body has four times the maximum safe level of uranium.



GURPREET SINGH, 7

Harmanbir Kaur, from the village of Muktsar, has 10 times the recommended safe level of uranium. Her brother, Naunihal Singh, six, was found to have double the safe level.



HARMANBIR KAUR, 15

"He is dependent on others. After me, who can care for him?" Neelum asks. "He tries to speak but he can't express himself and my heart cries. When will he understand that his legs don't work? What will he feel?"

India's reluctance to acknowledge the problem is hardly unexpected: the country is heavily committed to an expansion of thermal plants in Punjab and other states. Neither was it any surprise when a team of scientists from the Department of Atomic Energy visited the area and concluded that while the concentration of uranium in drinking water was "slightly

high", there was "nothing to worry" about. Yet some tests recorded levels of uranium in the ground water as high as 224mcg/l (micrograms per litre) – 15 times higher than the safe level of 15mcg/l recommended by the WHO. (The US Environmental Protection Agency sets a maximum safe level of 20mcg/l.)

Some scientists have proposed that the ground water may have been contaminated by contact with granite rocks that rise above the ground about 150 miles away to the south in the Tosham hills, in Haryana state. A continuation of these rocks is believed to run deep below

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