The study shows that in the city of Yokohama the number of children with autism continued to rise after the MMR vaccine was replaced with single vaccines. "The findings... are resoundingly negative," says Hideo Honda of the Yokohama Rehabilitation Center.

In the UK, parents panicked and vaccination rates plummeted after gastroenterologist Andrew Wakefield claimed in a 1998 study that MMR might trigger autism, although the study was based on just 12 children and later retracted by most of its co-authors. Soon the vaccine was being blamed for the apparent rise in autism, with Wakefield citing data from California. In some parts of the UK, the proportion of children receiving both doses of the MMR vaccine has dropped to 60 per cent. This has led to a rise in measles outbreaks and fears of an epidemic.

Not one epidemiological study has revealed a link between the vaccine and autism. But until now they have all concentrated on what happened after MMR vaccination for children was introduced. Honda's is the first to look at the autism rate after the MMR vaccine has been withdrawn. Japan withdrew it in April 1993 following reports that the anti-mumps component was causing meningitis (it plans to introduce another version).

With his colleagues Yasuo Shimizu and Michael Rutter of the Institute of Psychiatry in London, Honda looked at the records of 31,426 children born in one district of Yokohama between 1988 and 1996. The team counted children diagnosed as autistic by the age of 7. They found the cases continued to multiply after the vaccine withdrawal, ranging from 48 to 86 cases per 10,000 children before withdrawal to 97 to...
161 per 10,000 afterwards. The same pattern was seen with a particular form of autism in which children appear to develop normally and then suddenly regress — the form linked to MMR by Wakefield.

The study cannot rule out the possibility that MMR triggers autism in a tiny number of children, as some claim, but it does show there is no large-scale effect. The vaccine "cannot have caused autism in the many children with autism spectrum disorders in Japan who were born and grew up in the era when MMR was not available", Honda concludes. His team's findings appear in the Journal of Child Psychology and Psychiatry (DOI: 10.1111.j.1469-7610.2005.01425.x).

So if the vaccine is not responsible for the rising rates of autism, what is? "Clearly some environmental factors are causing the increases," says Irva Hertz-Picciotto of the University of California at Davis. Other experts disagree, saying the apparent rise could be the result of changing diagnostic criteria and the rising profile of the disorder (New Scientist, 17 February 2001, p 17).

GRAPH: MMR AND AUTISM: The top graph has been proclaimed as proof that autism rates rose after California introduced the MMR vaccine. It appears to show more cases being diagnosed each year. In fact, it shows all people registered as having autism in a single year, 1991, plotted by year of birth. It does not account for the rise in California's population, changes in diagnostic criteria in 1980 and a trend to diagnose children at a younger age, which might explain in apparent rise in cases. The more rigorous Yokohama study (bottom) shows no link between MMR vaccination and any form of autism.

By Andy Coghlan