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Measles: vaccine isn't always enough

NEW YORK, Dec 31 (Reuters Health) -- Vaccination, and even revaccination, may not protect children against measles infection in situations of "intense" exposure to the virus, results of a study suggest.

During one outbreak, children exposed to measles at home by sharing a bedroom with an infected sibling were at particularly high risk of measles, even if they had been revaccinated, according to a report in the December 1st issue of the American Journal of Epidemiology.

Dr. Mikko Paunio, of the University of Helsinki, Finland, and colleagues studied 51 people who contracted measles and 214 who did not, during an "explosive" measles outbreak in Finland in 1989.

The researchers found that vaccinated children were not completely protected against measles infection, and if they did become infected, were as contagious as infected children who had not been vaccinated.

This outbreak was "unusual for its high risk of measles among those who had received two or three doses of vaccine," the researchers note.

Intense exposure to the measles virus was one of the major reasons for the outbreak. According to the report, nearly 70% of vaccine failures occurred after intense indoor exposure, either at home or school. In one case, a single person infected 22 others -- including 8 who had been vaccinated -- most likely during an assembly of 144 students in a poorly ventilated hallway with no sunlight.

Another potential reason for the high vaccine failure rate in this outbreak was

improper refrigeration of the measles vaccine, according to the report.

“It is understandable that measles cases have been observed among fully vaccinated schoolchildren, since airborne transmission sometimes causes 'astronomical' contact rates,” the Finnish team explains. They speculate that airborne transmission of the pathogen may be “one reason why eradication of measles has been much more difficult than originally anticipated.”