Largest study ever firmly shows no link between MMR vaccine and autism

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Source:

ABSTRACT
Background:
The hypothesized link between the measles, mumps, rubella (MMR) vaccine and autism continues to cause concern and challenge vaccine uptake.

Objective:
To evaluate whether the MMR vaccine increases the risk for autism in children, subgroups of children, or time periods after vaccination.

Design:
Nationwide cohort study.

Setting:
Denmark.

Participants:
657 461 children born in Denmark from 1999 through 31 December 2010, with follow-up from 1 year of age and through 31 August 2013.

Measurements:
Danish population registries were used to link information on MMR vaccination, autism diagnoses, other childhood vaccines, sibling history of autism, and autism risk factors to children in the cohort. Survival analysis of the time to autism diagnosis with Cox proportional hazards regression was used to estimate hazard ratios of autism according to MMR vaccination status, with adjustment for age, birth year, sex, other childhood vaccines, sibling history of autism, and autism risk factors (based on a disease risk score).

Results:
During 5 025 754 person-years of follow-up, 6517 children were diagnosed with autism (incidence rate, 129.7 per 100,000 person-years). Comparing MMR-vaccinated with MMR-unvaccinated children yielded a fully adjusted autism hazard ratio of 0.93 (95% CI, 0.85 to 1.02). Similarly, no increased risk for autism after MMR vaccination was consistently observed in subgroups of children defined according to sibling history of autism, autism risk factors (based on a disease risk score) or other childhood vaccinations, or during specified time periods after vaccination.

Limitation:
No individual medical chart review was performed.

Conclusion:
The study strongly supports that MMR vaccination does not increase the risk for autism, does not trigger autism in susceptible children, and is not associated with clustering of autism cases after vaccination. It adds to previous studies through significant additional statistical power and by addressing hypotheses of susceptible subgroups and clustering of cases.

Primary Funding Source:
Novo Nordisk Foundation and Danish Ministry of Health.

The paper in the Ann Intern Med is followed by an editorial:
The MMR Vaccine Is Not Associated With Risk for Autism.
What should be highlighted is that “The risk for autism was no different in children who got the MMR vaccine than in children who did not. This remained true even among children who had risk factors for autism, such as a sibling with autism or an older father”.

Comment
It is good to see once again that the false hypothesis that there could be a link betweeen the MMR vaccine and autism is firmly dismissed. This is important as measles cases surge in the United States and Europe and the transmission was never stopped in many low and middle income countries. It is important to emphasize that by not joining the program other persons are placed at risk, especially people who are immunocompromised.

Vaccines are the most successful public health interventions ever developed and every physician has a responsability to be a strong and firm advocate of the childhood vaccination program.

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