

The autism-vaccine story: fiction and deception?

G. Michael Allan MD CCFP Noah Ivers MD CCFP

Clinical question

Is there any link between the measles-mumps-rubella (MMR) vaccine and autism?

Evidence

- In 1998, Wakefield and colleagues published a study¹ of 12 children that suggested a link among MMR vaccine, gastrointestinal symptoms, and autism.
- At least 20 higher-quality studies^{2,3} have since failed to show any link between the MMR vaccine and autism.
 - A cohort study following more than 500 000 children for a mean of 4 years found no association between MMR vaccination and autism or autistic spectrum disorder.⁴
 - A case-control study of 1294 autistic and 4469 nonautistic children found no association with vaccination.⁵
 - Time-series analyses reveal no association between the start of MMR immunization and autism^{6,7} and no association between trends in vaccination rates and autism.^{8,9}
 - Canadian research shows no link between MMR vaccination and neurodevelopmental disorders.¹⁰
- Studies also show no association with the preservative thimerosal, another suggested cause of autism.¹¹⁻¹³

Context

The truth about the Wakefield study is as follows:

- The 12 children in the study were carefully selected, and many of their parents already believed MMR vaccination was the cause of their children's autism.¹⁴
- Dr Wakefield had serious undisclosed financial conflicts: he was funded by lawyers involved in lawsuits against immunization manufacturers and was applying for a new vaccine patent.^{14,15}
- In 2004, 10 of the 13 authors retracted their support for the MMR-autism association.¹⁶
- Britain's General Medical Council investigation found Wakefield guilty of dishonesty and irresponsibility.¹⁵
- In 2010, the *Lancet* fully retracted the Wakefield study.¹⁴

The legacy of this unfortunate publication includes decreased immunization rates with increased measles rates¹⁷ and continued parental immunization fear.¹⁸

Bottom line

Convincing evidence from multiple countries shows no association between MMR vaccine (or thimerosal) and autistic disorders. The origins of this controversy incorporate unethical conduct and misleading research.

Implementation

A gap exists between ideal and actual pediatric immunization rates.¹⁹ Meta-analysis of 47 randomized controlled

trials showed that patient reminders can increase immunization rates.²⁰ Adding new babies to a register at first visits and using patient reminders when immunizations are due are effective, feasible, office-based approaches to improving immunization rates. Patient leaflets are available to help address concerns about long-term side effects.^{21,22} ✨

Dr Allan is an Associate Professor in the Department of Family Medicine at the University of Alberta in Edmonton and the Medical Director of Toward Optimized Practice. Dr Ivers is a family physician at Women's College Hospital in Toronto, Ont.

The opinions expressed in this Tools for Practice article are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

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