



**Amaze (Autism Victoria Inc)**  
A14601C ABN 15 600 724 949  
24 Drummond St, Carlton VIC 3053  
PO Box 374, Carlton VIC 3053  
**T** (03) 9657 1600 **F** (03) 9639 4955  
**E** admin@amaze.org.au **W** www.amaze.org.au

## Amaze (Autism Victoria)

### Position statement

# Is there a link between vaccines and ASD?

## Background

There has been a lot of publicity in the media and on the internet about the theory that Autism Spectrum Disorder (ASD) is caused by vaccines. Theories like this have circulated before, but most recently they have focused on the combined measles, mumps, rubella (MMR) vaccine or thiomersal, a mercury-based preservative that was used in vaccinations.

The proposed link between ASD and vaccinations has to do with two coincidences.

The first is that parents of children with ASD often start to notice that there is something different about their children when their children are between one and two years of age. This is also around about the age children are expected to develop speech and early social behaviours. It is when children with ASD miss these milestones that parents start to become concerned.

In addition, there is a kind of ASD in which children appear to develop normally up until a certain point, and then start to lose skills and regress. This also usually happens between one and two years of age; the same age at which children receive many of their routine vaccinations, like the MMR vaccine.

As a consequence, some parents worry that vaccinations might have caused their children to have ASD, that if they vaccinate their children those children might then develop ASD, or that a vaccination will make their existing ASD symptoms worse.

However, extensive research has shown no link between vaccines and ASD.

## The Wakefield Study

In 1998, Dr Andrew Wakefield and colleagues published a study that suggested there was a link between the MMR vaccine and autism in a group of twelve children. This study received a lot of publicity and led to many parents either choosing not to vaccinate their children or requesting that their children receive separate measles, mumps and rubella vaccinations, instead of the combined vaccination.

Over time, more evidence was revealed that led to Wakefield's study being withdrawn and his registration as a doctor was cancelled. The General Medical Council in the United Kingdom conducted an investigation

**Position statement:**

Is there a link between vaccines and ASD?

that found Wakefield guilty of serious professional misconduct. They found he dishonestly conducted unnecessary and invasive tests on children without proper ethical approval, and that he had an undeclared conflict of interest having patented a single measles vaccine in competition with the MMR. Other investigations found that Wakefield had falsified data, used tests that were not designed for children and was paid over £400,000 by a lawyer who planned to bring a class action suit on behalf of parents who believed the vaccines had caused their children's autism. This lawyer referred the children's parents to Wakefield to participate in the original study.

## Subsequent Large Scale Studies

In itself, the findings against Wakefield do not necessarily prove that there is no link between autism and vaccines. However, the concerns that there might be a link led to several large scale research studies being conducted across the world. The larger sample size there is in a study, the more chance there is that any effects will be revealed. A study in Finland involving 1.8 million children and another study in Denmark involving 440,000 children found no relationship between ASD and vaccinations. These studies found there was no difference in the rate of vaccination in children with ASD and children without, and no difference in rates of ASD in children who had been vaccinated and children who had not. Other studies have found that although the rates of ASD have increased over time, this increase continued even while the rates of vaccination decreased.

## Thiomersal

Thiomersal (known as thimerosal in the United States) is no longer used in routine childhood vaccinations in Australia. It is a preservative that contains very small amounts of mercury and that was used in some vaccinations. The theory that thiomersal may cause autism is based on a superficial resemblance between autism and mercury poisoning. However, the form of mercury in thiomersal is excreted from the body relatively quickly and does not result in mercury poisoning.

It is important to note that although there are some similarities between autism and mercury poisoning, there are also many differences. For example, mercury poisoning causes visual problems and psychosis, but these are not symptoms of autism. Although there is no evidence that thiomersal causes autism or any other harmful effects, as a precaution it has been removed from routine childhood vaccinations in most developed countries, including Australia. If thiomersal caused autism, the rate of autism would be expected to decrease within a few years of its removal from vaccines. Despite the removal of thiomersal, rates of ASD diagnosis have continued to rise.

## Conclusions

No one knows for sure what causes ASD, but evidence points strongly to a combination of genes involved in how a person's brain develops. There is overwhelming evidence that vaccinations do not cause ASD. What we do know is that the risks of not vaccinating children to protect them from diseases like measles far outweigh the risks of vaccinating them.

## Further Reading and References:

<http://www.ncirs.edu.au/immunisation/fact-sheets/mmr-vaccine-ibd-autism-fact-sheet.pdf>

Amaze (Autism Victoria)

**Position statement:**

Is there a link between vaccines and ASD?

<http://ncirs.edu.au/immunisation/fact-sheets/thiomersal-fact-sheet.pdf>

[http://raisingchildren.net.au/articles/autism\\_spectrum\\_disorder\\_and\\_vaccinations.html](http://raisingchildren.net.au/articles/autism_spectrum_disorder_and_vaccinations.html)

<http://www.immunize.org/catg.d/p4026.pdf>

<http://www.health.gov.au/internet/immunise/publishing.nsf/content/uci-myths-guideprov>

<http://news.theage.com.au/breaking-news-world/lancet-formally-retracts-1998-paper-linking-vaccine-and-autism-20100203-nbe3.html>

<http://www.smh.com.au/lifestyle/life/vaccination-a-victim-of-its-own-success-20110920-1kixy.html>

Deer, B. (2011). How the Case Against the MMR was Fixed. *British Medical Journal*.

<http://www.bmj.com/content/342/bmj.c5347.full>

Gerber, JS and Offit, PA. (2009). Vaccines and Autism: A Tale of Shifting Hypotheses. *Clinical Infectious Diseases*, 48 (4). 456-461. <http://cid.oxfordjournals.org/content/48/4/456.full>

Madsen KM, Hviid A, Vestergaard M, et al. (2002). A Population-based Study of Measles, Mumps, and Rubella Vaccination and Autism. *New England Journal of Medicine*. 347:1477-82

Patja, A, Davidkin, I, Kurki, T, et al. (2000). Serious Adverse Events After Measles-Mumps-Rubella Vaccination during a Fourteen-Year Prospective Follow-up. *Pediatric Infectious Disease Journal*. 19 (12). 1127-34 <http://www.nccn.net/~wwithin/MMR.pdf>