

# Vaccines Controversy

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## Result

Andrew Wakefield hypothesized that eight out of a group of 12 youngsters referred to him for gastrointestinal problems had lost acquired skills after receiving the MMR vaccine. (Glazer) In the original paper, Wakefield and 12 coauthors claimed to have investigated “a consecutive series” of 12 children referred to the Royal Free Hospital and School of Medicine with chronic enterocolitis and regressive developmental disorder. The authors reported that the parents of eight of the 12 children associated their loss of acquired skills, including language, with the MMR vaccination (Deer; Wakefield et al.637). Wakefield described his results in the *Lancet*:

“Onset of behavioural symptoms was associated, by the parents, with measles, mumps, and rubella vaccination in eight of the 12 children, with measles infection in one child, and otitis media in another. All 12 children had intestinal abnormalities, ranging from lymphoid nodular hyperplasia to aphthoid ulceration. Histology showed patchy chronic inflammation in the colon in 11 children and reactive ileal lymphoid hyperplasia in seven, but no granulomas. Behavioural disorders included autism (nine), disintegrative psychosis (one), and possible postviral or vaccinal encephalitis (two). There were no focal neurological abnormalities and MRI and EEG tests were normal. Abnormal laboratory results were significantly raised urinary methylmalonic acid compared with age-matched controls ( $p=0.003$ ), low hemoglobin in four children, and a low serum IgA in four children.” (Deer; Wakefield et al. 638).

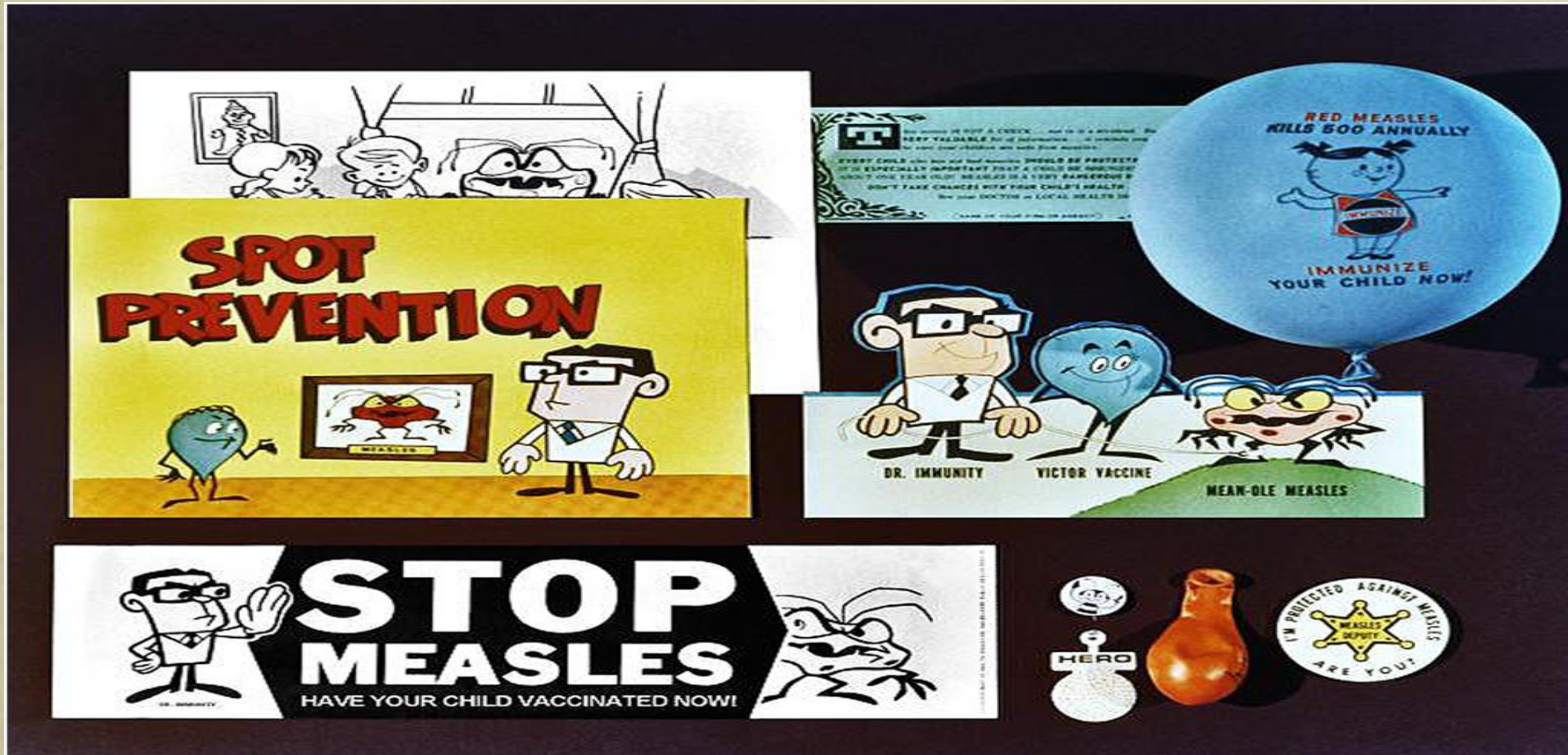
Wakefield’s published interpretation of the results in the *Lancet* state “We identified associated gastrointestinal disease and developmental regression in a group of previously normal children, which was generally associated in time with possible environmental triggers.” (Deer; Wakefield et al.) These environmental factors can be described as pollution, a virus or a vaccine (Glazer). The focus of Wakefield’s study was directed toward the MMR vaccine so it is derived that the environmental trigger in this study would come in the form of the vaccine. Wakefield offered as part of his discussion in the article, “We did not prove an association between measles, mumps, and rubella vaccine and the syndrome described. Virological studies are underway that may help to resolve this issue.” (Wakefield et al. 641) Immediately after the study was published a plethora of other studies came about disputing this claim. One study followed over five hundred-thousand children over an average of four years and found no connection with autism or autism spectrum disorder (Allan,Iver). Four hundred-thousand of these children received the MMR vaccine and one hundred-thousand did not. The rate for autism remained the same with both groups (Glazer). Since the publication of Wakefield’s study there has been a noticeable decline in vaccination in the United Kingdom (Hall 27). The immunization rate dropped from ninety three percent to seventy five percent (Hall 27). There were 56 reported cases of measles in 1998. That figure rose to 1,308 including two deaths in 2008(Hall 27). The United States also saw numbers of vaccination fluctuate (CDC). The results of Wakefield’s study gained mass media attention contributing to 25% of the population being unsure of the safety of vaccines (Luthy et al. 28). The CDC reported 64 cases of measles in 2008 despite the disease being declared eliminated by the World Health Organization (WHO) in 2000. 63 of the infected individuals reported had no record of being vaccinated. 54 of the reported cases were imported. During February 2010, *The Lancet* retracted the research article written by Dr. Andrew Wakefield and his colleagues. Britain’s General Medical Council said Wakefield’s conduct in his research had been “dishonest” and “irresponsible,” noting that he had used biased patient selection and even, reportedly, had paid children at his son’s birthday party to give blood samples (Glazer). It was also reported that Wakefield failed to disclose financial conflicts. The lawyers who funded the research had pending lawsuits against the vaccination companies (Allan,Iver). He was also applying for a new vaccine patent at the time of the study (Allan,Iver).

## Conclusion

Consideration was given to both positive and negative arguments of the vaccination debate while researching the information that was available. Interestingly the research that was published by Wakefield includes a statement admitting that they were not able to link the measles mumps and rubella vaccine to the condition in which they were researching. It was noted in another journal that Wakefield held a conference where he would announce that the MMR vaccine probably caused the onset of autism and he recommended going to separate dose for each vaccine (Hall 27). The recent revelations of the ethical violations that Wakefield engaged in serve as a disappointing reminder to the scientific community that despite how much effort is put into gaining the public trust it can be broken with one bad article. More frequently people are choosing to not vaccinate their child for fear they will become autistic. Despite the vast majority of research unable to link autism with vaccine people are still confused with misinformation. A study done in Utah shows that 25% of the residents are concerned that their child will become autistic after vaccination (Luthy et al.). 24% delayed their child’s immunization over safety concerns (Luthy et al.). The conflicting opinion in the scientific debate over vaccination isn’t the only contributing factor to the decrease in vaccinations. There are also concerns over the amount of vaccines that are being recommended to children. Parents are also under the impression that because the disease is not an epidemic there is no need for their child to be immunized. The public relies on trustworthy scientific research to make informed decision about their health. If the researcher fails to hold themselves to a high standard of ethics public trust is broken down which results in confusion and in extreme cases hysteria.

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Gross, Liza. Figure 2. *Publicizing a life-saving technology*. Before 1963, when the measles vaccine became available, each year approximately 3 to 4 million cases, and an average of 450 deaths, were reported in the US. Thanks to the success of vaccination campaigns—publicized with a wealth of quirky promotional materials (above)—measles is no longer endemic in the US, though it is widespread in other countries. Last year, the US saw the largest outbreak of measles since the disease was declared eliminated in 2000; public health officials traced the majority of cases to unvaccinated Americans who imported the disease from Europe. Despite the availability of a safe, cost-effective vaccine, measles remains a leading cause of death among young children worldwide. Vaccination efforts resulted in a 74% global reduction in measles deaths between 2000 and 2007, according to the World Health Organization, yet 197,000 children died in 2007—that’s nearly 540 a day.doi:10.1371/journal.pbio.1000114.g002

Figure 1. Autism

Autism is one condition in a group of developmental disorders known as autism spectrum disorders (ASDs). Autism typically appears before the age of three and is four times more likely to occur in boys than girls. Autism is characterized by impaired social interactions, problems with communication, and unusual behaviors and interests. An infant may be unresponsive to people or appear to develop normally and then withdraw from social engagement. Children with autism often avoid eye contact with other people, do not understand social cues (such as facial expressions), and are not interactive in play with other children.

Many children with autism engage in repetitive movements (such as rocking and twirling); some engage in biting or head-banging. Autism affects individuals differently, and symptoms vary from mildly affected to debilitating handicaps. Some children with autism grow up to lead normal or near-normal lives.

The causes of autism are unknown, but scientists believe that genetics and environment play a role. At one time, autism was thought to be caused by parental behavior, but that theory has been disproved. A number of genes associated with autism have been identified, and researchers have found that people with autism have irregularities in several regions of the brain.

Autism cannot be cured, but it is treatable. Treatment includes therapies and behavioral interventions to help children develop social and language skills. Medications are often prescribed to manage symptoms of behavioral or emotional problems, such as obsessive-compulsive disorder or depression. Many controversial therapies are available for children with autism, but most are not supported by research. Studies show that early diagnosis and intervention lead to significantly improved outcomes. Autism can often be detected as early as 18 months, and since parents are the first to notice symptoms in their child, the CDC (2008) launched a public awareness campaign called “Learn the Signs, Act Early.” Parents, child care providers, and health professionals can track a child’s development by understanding milestones a child should reach in playing, learning, speaking, and acting. These developmental milestones can be accessed at <http://www.cdc.gov/ncbddd/autism/actearly/>

Sources: CDC, 2007c, 2008; National Institute of Neurological Disorders and Stroke, 2008.

## Abstract

Our research was conducted on a Vaccine controversy which raised the question on ethics, morality, safety and effectiveness of vaccination on children. The case study we focused on was about a study done by Dr. Andrew Wakefield and twelve other Colleagues, which was published in a well know journal The Lancet. The study has recently been retracted because an investigation found that he failed to mention that his research of the MMR vaccine was funded through solicitors seeking evidence to use against vaccine manufactures (Deer, Brian). To conclude our research we compared the current vaccination rates with the rates after the report was published in the United Kingdom. Furthermore, we also compared the number of reported cases of measles in the United States from 1997 to 2010.

## Purpose

The purpose of this research is to evaluate how scientific research affects public opinion.

## Background

In 1998 *The Lancet*, a well known journal in the United Kingdom, published findings of Dr. Andrew Wakefield and twelve Colleagues. Their claim was that the measles, mumps, and rubella (MMR) vaccines were linked to the cause of Autism. The study consisted of twelve autistic children, which were routinely admitted to the Royal Free hospital in north London in 1996-1997; each child was subjected to colonoscopies, lumbar punctures, and invasive procedures. Dr. Wakefield claimed that eight parents of the twelve children blamed MMR: parents said Symptoms of autism had set in within days of the vaccinations (Deer, Brian). This report created a global health alert mostly among parents who with the new study did not know what to do about their children’s immunizations. Following Wakefield’s findings at least 20 higher quality studies have been performed, but each have failed to show any linked between the MMR vaccine and Autism. In 2004, 10 of the authors retracted their support for the MMR-autism association. Brittan’s General Medical council investigation found Dr. Wakefield guilty of dishonesty and irresponsibility (Allen G. Michael and Ivers Noah, Vol. 56). Investigations also found that Dr. Wakefield failed to mention that he was being funded by solicitors that wanted to discredit vaccine manufactures (Deer, Brian). In 2010, The Lancet fully retracted Dr. Wakefield studies. Autism is a devastating disease that affects entire families every day; so, parents have a reason to be concerns about the causes and treatment of autism. Even though we have learned few things about autism, there are many cracks in our knowledge of what really causes autism and how it can be prevented. So there’s no wonder why parents and physicians have concerns about vaccinations.