

# Debates on the mmr vaccination



**ASSIGN  
BUSTER**

**Master document text**

“ I am no longer trying to dig up evidence to prove vaccines cause autism. There is already abundant evidence.....This debate is not scientific but is political” (Ayoub, D. (2006). Using your knowledge of immunology, discuss the arguments for and against the use of vaccination.

Vaccination has become an extensively useful strategy for the prevention of infectious disease and continues to be one of the most successful health interventions and remains one of society's best healthcare investments (ref). Never in the history of human progress, wrote the pathologist Geoffrey Edsal, “ Has a better and cheaper method of preventing illness been developed than immunisation at its best (ref).

The mainly ambitious aim of vaccination is eradication of the disease. This has been achieved for smallpox; the eradication of polio is being attempted and there has been a dramatic downward trend in the incidence of most of the diseases against which vaccines are currently used. The incidence of the invasive disease Haemophilus influenza, which causes bacterial meningitis in children has decreased in the United States of America by an impressive 99%, sby introducing the vaccine in 1988 (ref). Children born in the U. S. are fully vaccinated from the age of 1 years old to adolescence, saving approximately 33, 000 lives and an estimated 14 million infections (ref). However, as long as any focus of infection remains in the community, the main effect of vaccination will be the protection of the individual against the disease (ref). The success of a vaccination programme relies not only on the development and use of vaccines themselves, but also on an understanding of the epidemiologic aspects of disease transmission (ref). Vaccination aims

<https://assignbuster.com/debates-on-the-mmr-vaccination/>

to prime the adaptive immune system to the antigens of a particular microbe so that a first infection induces a secondary response. The principle of vaccination is simple; to induce a “ primed” state so that on first contact with the relevant infection, a rapid and effective secondary immune response will be mounted, leading to prevention of disease. Vaccination depends upon the ability of lymphocytes, both B and T cells, to respond to specific antigens and develop into memory cells, and therefore represents a form of activity enhanced adaptive immunity (ref). In 1999, the Centres for Disease Control (CDC) and the American Academy of Paediatrics (AAP) requested that vaccine makers should remove a organomercury compound called thiomersal from vaccines (ref). This was phased out of the United States of America and European vaccines, except for some preparations of influenza vaccine (ref). The CDC and the AAP decided that there was no harm in exercising caution, even if it did turn about to be unwarranted, however the actions sparked confusion and controversy which result in the diversion of attention and resources away from the efforts to determine the causes of autism (ref). Child vaccines which contained the thiomersal was alleged to contribute to autism (ref), however in 2004 the Institute of Medicine (IOM) committee rejected any causal relationship between autism and thiomersal-containing vaccines (ref). However the incidence of autism increased steadily despite the removal of thiomersal from childhood vaccine (ref). thiomersal exposure has not been accepted as a factor in causing autism (ref).

Immunisation safety is a real concern because all vaccines may cause side effects. Both healthcare workers and patients need reminding that immunisation is an induced controlled stimulus to the immune system, so

therefore some adverse reactions can be expected. Most of the reactions however, are transient and mild. Immunisation safety concerns have existed since the day of the first available vaccine. Since the introduction of Jenner's cowpox vaccine, the benefits of saving children from tragic outcomes of common diseases outweigh the risks of perceived adverse events following immunisation.

Immunisation safety concerns are different from concerns about other medical interventions because they are administered to generally healthy individuals and the tolerance of adverse events following immunisation is subsequently lower compared to adverse events following medication for an existing illness (ref).

The success of immunisation programmes depends on the public confidence in their safety despite the side effects vaccines may cause.

Concerns about immunisation safety often follow a pattern: a medical condition is suggested as an adverse effect of the vaccination, then a premature announcement is made of the alleged effects which then results in several years to try and regain the public's confidence in the vaccine (ref). Vaccination in the United Kingdom became widespread in the early 1800's after the work by Jenner (ref).

Vaccination acts were brought in to force to encourage vaccination and it was made mandatory that all infants in 1853 were vaccinated (ref). Refusal to have the vaccinations received the highest penalty resulting in a prison sentence (ref). The relationship between the British State and its citizens significantly changed, causing a public backlash.

<https://assignbuster.com/debates-on-the-mmr-vaccination/>

In 1867, a law extended the requirements to the age of 14 years old, however, opponents focused in 1898 on it causing an infringement of individual's freedom, which resulted in a law allowing for conscientious objection to compulsory vaccination (ref). Compulsory vaccination policies at various times provoked opposition from people who believe that the government should not be infringing on individuals freedom to choose what medications they take, even if this increases a risk of disease to themselves and others (ref).

Some vaccine critics claim that public health has never had any benefits from vaccination (ref). They argue that any reduction on communicable diseases, which were rampant in conditions where overcrowding, poor sanitation, poor diet and an almost non-existent hygiene existed, reduced due to the changes in the conditions excepting vaccination (ref).

Others dispute that vaccines only give a temporary immunity and therefore boosters are required, whereas those who have survived the disease develop a permanent immunity (ref). Children who have survived diseases such as diphtheria go on to develop a natural immunity which will remain longer than any immunity developed by the vaccination (ref). Some critics argue that the benefits of reducing the mortality rates among the general population outweigh all health risks associated to older or weaker adults (ref). Vast improvements have been made to public health (ref). Despite vaccines causing side effects and immunisation safety is a real concern, public attention shifts away from the risks as the success of the immunisation programme increases (ref) and the incidence of disease decreases (ref). However health authorities are finding it challenging to preserve public

<https://assignbuster.com/debates-on-the-mmr-vaccination/>

support for the vaccination programmes (ref). The rate in diagnosis of autism has had a worldwide increase (ref) , driven by the broadened diagnostic criteria and increased awareness concerns have been fuelled that vaccines might cause autism (ref). Theories for this alleged association have mainly centred on the measles-mumps-rubella (MMR vaccine (ref). however, studies in biology and epidemiology have failed to support these claims (ref).

The MMR vaccine in the United Kingdom was the subject of controversy, when a paper was published in The Lancet in 1998. The paper written by a Gastroenterologist Dr Andrew Wakefield et al, reporting a small study of 12 children, whom mostly with autism spectrum disorders with sudden onset after administration of the Vaccine (ref). During a 1998 press conference, Andrew Wakefield suggested that it would be safer to give children the vaccine in three separate doses rather than a single vaccination. This suggestion was never supported by the paper and subsequent peer-reviewed studies failed to find any association between the autism and the vaccine (ref). In 2001 and 2002, the controversy grew momentum. In 2001 26% of family doctors felt that the government had failed to prove that there was no link between autism and the MMR (ref). By 2002, over 1257 stories were published (ref). The confidence in the MMR fell as a result of the scare, from 59% to 41% (ref). A survey of 366 family doctors in the United Kingdom in 2003, reported that 77% would recommend giving the child the MMR vaccine, even if there was a close family history of autism (ref). In the same study an extremely small number, 3% of the family doctors thought that autism could sometimes be the caused by the MMR vaccine (ref).

A similar survey (ref) found that confidence in the MMR had been increasing over the previous two years (ref). Most of the UK National Health Service doctors only had the combined vaccine and those who did not want to give their children the combined vaccine had to pay for the separate vaccines or not vaccinate their children (ref), which added to the controversy of the MMR.

Tony Blair, who was the Prime Minister at the time, strongly supported the vaccines stating “ the vaccine was safe” (ref mmr vaccine). However, on several occasions Tony Blair would refuse on grounds of personal privacy whether his son had received the vaccine, in contrast the now immunised (ref), The risks of children catching the disease while waiting for the full immunisation coverage decreases with the administration of the combined vaccine instead of separate vaccines (ref). The combined vaccine’s two injections cause the children less pain and distress, rather than the six injections required by the separate vaccines, and there is the likelihood of some being delayed or missed due to extra clinic visits (ref).

Vaccination uptake had significantly increased in the UK when the MMR became available in 1988 (ref mmr vaccine). Health professionals have heavily criticised media coverage of the controversy from triggering a decline in vaccination rates (ref mmr).

MMR vaccination compliance dropped significantly after the controversy began in the UK, from 92% in 1996 to 84% in 2002. In 2003, in some London boroughs, it was as low as 61%, which is far below the rate needed to avoid an epidemic of measles (ref).

The incidence of the three diseases increased significantly in the UK (ref). 56% cases of measles were confirmed in the 1998, this increased over the years and in 2006, 449 cases were reported in first five months of the year (ref)m and the first death since 1992, these cases occurred in children who were inadequately vaccinated (ref).

In 1999, cases of mumps began to rising after years of very few cases and by the year 2005, there was a mumps epidemic with nearly 5000 notifications in January 2005 alone (ref).

Disease outbreaks also caused casualties in nearby countries. In Ireland an outbreak in 2000 resulted in 1500 cases and 3 deaths, all as a result of the decrease vaccination rates following the MMR controversy (ref)

Measles was declared an endemic in the UK in 2008 for the first time in 14 years. A population of susceptible children who would spread the disease was created following the low MMR vaccination rates (ref). MMR vaccination rates amongst English children have remained unchanged in 2007-08, a level to low to prevent another serious measles outbreak (ref).

It later emerged that Andrew Wakefield had not informed the medical authorities or colleagues that he had received funding from litigants against vaccine manufacturers (ref). Wakefield has been heavily criticised for instigating a decline in the vaccination rates and medically (ref) especially on the way the research was conducted ethically (ref)



The Sunday Times in 2009 reported that patient data was manipulated by Wakefield and misreported the results in his 1998 paper, creating the appearance of a link between autism and the MMR (ref).

A systematic review of 31 scientific studies by the Cochrane Library in 2005 concluded that there is no credible evidence to support any links between Autism and the MMR vaccine, and that the MMR is necessary in the prevention of disease with carries the potential risk of complication and even death in some cases (ref). The report also highlighted that the lack of confidence in the MMR has damaged public health and that the design and reporting of the safety outcomes was largely inadequate (ref). Ensuring the safety of vaccination is a major component of the national immunisation programmes of most countries. A major part of this effort is surveillance, and scientific studies about the possible occurrence of adverse events following immunisation. Although a number of vaccine safety studies is increasing, this is not in response to any evidence about the true safety of vaccines, but in response to the increasing number of new vaccines being used and the complex nature of these vaccines.

A number of vaccine safety studies have been conducted or are in progress, some in reaction to the climate of concern, some carried out proactively and others as part of ongoing surveillance. However, because the number of safety-orientated studies is increasing, one should be aware that this fact in itself could contribute to the concern. The internet has increasingly become a powerful means of international communication and an almost inexhaustible source of information, capable of playing an influential role in

both the positive and the negative sense. It represents a direct and efficacious tool to spread a positive message and to stress the health benefits, economic attractiveness and safety of vaccination. However, inaccurate, misleading or simply wrong information regarding potential side effects or dangers of vaccination spreading through the internet exacerbates worries about vaccine safety and may cause parents to postpone or refuse vaccination of their children. A wide range of issues concerning vaccine safety is being taken up by anti-vaccination groups as well as by other groups whose concerns may reflect local customs, or religious, political or other beliefs.

Anti-vaccination lobbies have also understood the possibilities of the internet can be exploited and could strengthen their means to campaign against vaccination. This is demonstrated by the occurrence of a multitude of specific websites heavily relying on emotional appeal while proclaiming a message that undermines the benefits of vaccination.

Vaccine scares continue to have an impact on immunisation coverage. To respond to this challenge, there is a need to develop vaccine communication strategies that provide a balance between evidence-based information and advocacy and lobbying activities. Furthermore, compiling independent, international reviews of vaccine safety issues is required, together with relevant statements from authoritative neutral expert groups. This should be done within a h3 international collaboration, with direct, early and clear statements agreed on by authorities and other key parties, preceding public communications.

Creating a positive environment for immunisation can be achieved by supporting evidence-based information thus repositioning the importance and value of vaccines and vaccination. This will ultimately ease the task of health care decision makers, especially in developing proactive communication strategies to deal with crises that have a potentially negative impact on vaccine coverage, and consequently on the health status of children. Loss of public confidence in vaccination is one of the greatest threats to public health and must be addressed by local, national and international bodies, pooling resources, to prepare for possible issues that might be taken up by anti-vaccination groups or the media. The health care community should actively promote, and personally recommend, the benefits and safety of vaccination in language that is readily and easily understood by the targeted audience.