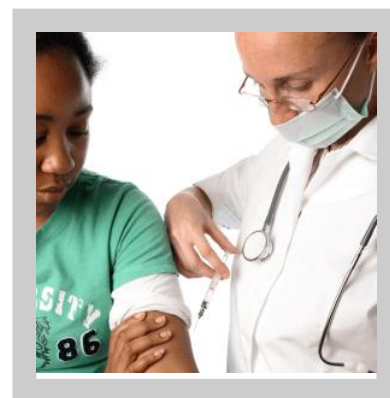


Name \_\_\_\_\_

Date \_\_\_\_\_

## Autism and Vaccines: No Link

Autism spectrum disorders (ASD) are a range of psychological conditions characterized by abnormalities in social interaction, behavior, interests, and communication. The five forms of ASD include classical autism, Asperger syndrome, Pervasive Developmental Disorder, Rett syndrome, and Childhood Disintegrative Disorder. Although the number of reported cases of ASD has experienced a dramatic increase in the past 25 years, the majority of doctors agree that this increase is due to changes in diagnostic practices and advances in the understanding of psychiatric health.



While there is no general consensus among medical professional about the underlying causes of ASD, theories range from genetic inheritance to environmental factors. One of the most controversial theories to have emerged in recent times is the hypothesis that ASD could be caused by the MMR vaccine, which is an immunization against measles, mumps, and rubella that was first developed in the 1960's. The vaccine is a mixture of three live viruses and is administered via injection to children when they are one year old. By the late 1990's, this vaccination had led to the near-eradication of measles in countries that employed widespread inoculation. However, a combination of spurious scientific data and alarmist media attention led to an entirely preventable resurgence in measles cases in the early 21<sup>st</sup> century.

The first claims of a connection between the MMR vaccine and autism were made in 1998, when an article in *The Lancet*, a respected British medical journal, reported on eight cases of autism that could possibly be traced back to the administration of an MMR vaccine. The parents of the children in this study contended that the symptoms of autism in their children developed within days of vaccination. During a press conference, Andrew Wakefield, one of the authors of the article, called on British doctors to stop giving combined MMR vaccines, instead advocating for individual inoculations against measles, mumps, and rubella.

Following the publication of this article, Wakefield published several follow-up papers that further questioned the safety of the MMR vaccine. An onslaught of media coverage then began. Parents appeared on television sharing anecdotal evidence linking their child's inoculation to the onset of ASD. The popular press quickly seized upon this story; in 2002, over 1200 articles were written about the link between MMR vaccines and ASD. Less than 30% of these articles mentioned that an overwhelming amount of scientific evidence suggested that these vaccinations were completely safe.

Since the initial panic, fears that MMR vaccines cause ASD have generally subsided. A survey completed in 2004 showed that only 2% of people in the United Kingdom thought that there was a legitimate link between MMR vaccines and ASD. Fears were most likely allayed when, in 2004, an investigative reporter discovered that Andrew Wakefield had received a large sum of money from lawyers seeking evidence to use in cases against vaccine manufacturers. It was then discovered that Wakefield had applied for patents on an alternate MMR vaccine. These severe conflicts of interest damaged the credibility of Wakefield's study beyond repair. In 2010, Wakefield was tried by Britain's General Medical Council under allegations that he had falsified data and manipulated test results. The Council found that Wakefield had acted "dishonestly and irresponsibly," and consequently *The Lancet* officially retracted Wakefield's 1998 article.

The anti-MMR vaccine panic that arose immediately after Wakefield's article was published had a significant negative effect on the health of thousands of children. Once the controversy began, the number of parents in the United Kingdom who inoculated their children with the MMR vaccine experienced a sharp decline. Not surprisingly, the number of reported cases of measles increased; while there were only 56 confirmed cases of measles in the UK in 1998, in 2008 there were over 1300. Between 2002 and 2008, there were outbreaks of measles throughout Europe and North America. These outbreaks cost millions of dollars in health care and resulted in the deaths of dozens of children and adults with compromised immune systems.

Who is to blame for these deaths? It is easy to hold Andrew Wakefield accountable, but the media must also bear some of the responsibility. The media's appetite for a sensational medical story overshadowed the fact that there was very little scientific evidence behind Wakefield's claim.

Although Wakefield is certainly not the first person to publish fraudulent scientific findings in a respected medical journal, the magnitude of this event was anomalous, as most medical hoaxes are discredited before they can reach the popular media. While *The Lancet* should not have published Wakefield's article without checking it thoroughly, the popular media should not have blown the study out of proportion without fully considering the consequences.

- 1) The primary purpose of the passage is to
  - A. warn parents about the dangers of not vaccinating their children against measles
  - B. criticize *The Lancet* for publishing Wakefield's article without vetting it more thoroughly
  - C. provide an overview of the MMR vaccine controversy, including its consequences and responsible parties
  - D. inform readers about the history of the MMR vaccine, especially in the US and the UK
  - E. blame parents who believed alarmist media reports for the measles outbreaks
  
- 2) As used in paragraph 1, which is the best antonym for **spurious**?
  - A. reassuring
  - B. safe
  - C. clear
  - D. necessary
  - E. legitimate

3) Which of the following statements most accurately summarizes the author's explanation for the increase in reported cases of ASD over the past 25 years?

A. Over the past 25 years, parents have been more likely to have their young children inoculated against MMR.

B. Since the results of Wakefield's study were published, parents have been less likely to have their young children inoculated against MMR.

C. In the past 25 years, doctors have developed a better understanding of genetics, which is thought to be the leading factor in whether or not a child will develop ASD.

D. The drastic changes in our environment that have occurred over the past 25 years have most significantly contributed to an increase in cases of ASD.

E. The increase in reported cases of ASD is mainly the result of an increased understanding of how to recognize ASD.

4) Which of the following pieces of evidence from paragraphs 2 and 3 support(s) the author's claim that popular media is partially responsible for creating unnecessary panic?

I. "An article published in *The Lancet*, a respected British medical journal, reported on eight cases of autism that could possibly be traced back to the administration of an MMR vaccine."

II. "In 2002, over 1200 articles were written about the link between MMR vaccines and ASD. Less than 30% of these articles mentioned that an overwhelming amount of scientific evidence suggested that these vaccinations were completely safe."

III. "Parents appeared on television sharing anecdotal evidence regarding the links between their child's inoculation and the onset of ASD."

A. I only

B. II only

C. I and II only

D. II and III only

E. I, II, and III

5) In paragraph 4, the author cites all of the following as ways that Wakefield's study was discredited EXCEPT

A. investigators discovered that the parents of children in Wakefield's study were litigants in a lawsuit against the pharmaceutical company that made the MMR vaccine

B. The Lancet eventually retracted Wakefield's original article

C. it was discovered that Wakefield accepted money from lawyers who were filing a suit against the pharmaceutical companies responsible for making the MMR vaccine

D. an investigation into Wakefield's research found that he had falsified data in his initial study

E. Wakefield himself had apparently been working on an alternate vaccine to compete with MMR

6) Based on its use in paragraph 4, it can be inferred that the phrase “conflicts of interest” means situations in which people

- A. unethically accept large sums of money
- B. have interests that fail to accord with those of the mainstream media
- C. falsify data and manipulate test results
- D. have personal interests that threaten their official objectivity
- E. stand to gain financially through illegal means

7) As used in the final paragraph, which is the best synonym for **anomalous**?

- A. timely
- B. calamitous
- C. abnormal
- D. unacceptable
- E. coincidental

8) Do you believe parents have a responsibility to vaccinate their children against sicknesses such as the measles? Why or why not?

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