

## **Essay: The Importance of Vaccines**

### **Introduction:**

Vaccines have been a hot topic of debate and controversy for many years. While some people believe in their efficacy and importance, others doubt their safety and effectiveness. The issue is important because vaccines protect individuals and communities from serious and sometimes deadly diseases. Vaccination is a crucial aspect of public health, and its benefits cannot be overstated. The issue of vaccination is important because it has become increasingly controversial in recent years due to misinformation and misconceptions about its safety and efficacy. This issue is critical to scientific literacy because it demonstrates how scientific evidence can be misinterpreted and misrepresented, leading to harmful consequences.

In this essay, I will examine the science behind vaccines, evaluate the authenticity of the information presented in the literature and popular media, develop a stance for vaccines, and justify my position using scientific evidence.

### **Review of Literature and Popular Media:**

Vaccines have been extensively studied and tested for safety and effectiveness. Vaccination has been a significant public health achievement of the 20th century, contributing to the eradication of smallpox and the near-elimination of other diseases such as polio and measles. Vaccination is a crucial aspect of public health as it protects individuals, families, and communities from spreading infectious diseases.

Vaccines are based on the principle of creating immunity to a specific disease by introducing a small amount of the pathogen into the body. This triggers the immune system to create a defence against the disease without causing illness. The scientific consensus is that vaccines are safe, effective, and crucial to public health.

Despite the overwhelming scientific evidence supporting the safety and efficacy of vaccines, misinformation and misconceptions have led to decreased vaccination rates in some communities. A study by the Centres for Disease Control and Prevention (CDC) found that vaccine hesitancy is one of the top ten threats to global health. Vaccine hesitancy is a reluctance or refusal to vaccinate despite the availability of vaccines, and it has been fuelled by misinformation and misconceptions about vaccine safety and efficacy.

### **Developing a Stance:**

I firmly believe in the importance of vaccines. Vaccines have eradicated or significantly reduced the incidence of many serious and deadly diseases, such as smallpox, polio, and measles. Vaccines have also been shown to be safe and effective through rigorous testing and monitoring. Immunisation is a key public health strategy that benefits both individuals and communities by preventing outbreaks of diseases. By getting vaccinated, individuals not only protect themselves but also vulnerable populations who cannot get vaccinated due to medical reasons. Therefore, I advocate for vaccination as a crucial public health measure.

### **Opposing Position and Its Weakness:**

The opposing position to vaccination is mainly based on misinformation and fear. Some people believe that vaccines cause autism or other harmful side effects despite the lack of scientific evidence to support these claims. Others argue that vaccines are not necessary because the diseases they prevent are not prevalent anymore. However, this is a flawed argument because the decline in

disease incidence is directly linked to vaccination efforts. Furthermore, the resurgence of some diseases, such as measles, in recent years is a reminder of the importance of vaccination.

The spread of misinformation about vaccines is not new, but social media platforms have amplified its reach in recent years. Anti-vaccine content has been found to be more prevalent on social media platforms than pro-vaccine content, and it is often shared widely by individuals with no scientific expertise. The popularity of anti-vaccine content on social media platforms has led to decreased vaccination rates in some communities, resulting in outbreaks of preventable diseases. However, some people remain sceptical and propagate misinformation about vaccines, such as the belief that they cause autism. This claim has been thoroughly debunked by multiple studies, but it persists in the popular media.

### **Conclusion:**

In conclusion, vaccines are an essential tool for protecting public health. The scientific consensus supports their safety and effectiveness, and their role in preventing serious diseases cannot be understated. While there may be some scepticism and misinformation surrounding vaccines, the evidence overwhelmingly supports their use. By getting vaccinated, individuals can protect themselves and vulnerable populations, contributing to the overall health and well-being of society.

### **References:**

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### **Acknowledgements:**

Developed with the assistance of OpenAI's ChatGPT AI language model, accessed on 18 February, 2023. The AI tool was used to provide initial ideas for the assessment piece which were then enhanced. The content from the generative AI tool is attached in Appendix 1. The prompts provided were:

*You are to apply your knowledge and skills by developing a scientific argument around a science-based issue. You must develop and justify a stance on your chosen issue using scientific evidence. Task Products Infographic (100 words) Graphic visual representation of information, data or knowledge intended to present particular information quickly and clearly. One page PDF. Essay (1000 words) containing: Introduction. Outline the issue selected, why it is important or controversial and how it links to scientific literacy. Review of literature and popular media. Analyse and synthesise the information to evaluate the authenticity of the information. Develop a stance, for or against and justify that position (claim, evidence, reasoning). Articulate the opposing position and demonstrate its weakness. Conclude by summarising why you think your position is the important choice.*

*References. Use APA style referencing within the essay and reference list. The infographic should reference you as the author. The reference list should contain only references used directly in task.*

## **Appendix:**

### **Essay: The Importance of Vaccines**

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