Vaccines have long been a vital part of a healthy life. As early as the year 1000 in China, early forms of vaccinations were used to help prevent diseases such as smallpox <https://www.historyofvaccines.org/timeline#EVT_1>. With such a historically proven track record to be a safe and effective way of preventing disease, why are parents now refusing to vaccinate their kids?

(Insert clip: <https://www.youtube.com/watch?v=PBGdr_RSSO0> 0:47 - 0:57)

Unfortunately, the idea that vaccines are unsafe is fake news perpetuated by the internet, and believed by parents who want to choose the safest option for their kids. They research ingredients in vaccines that are unknown, and are worried that they will harm their child. This worry is then compounded by fake news, making parents even more hesitant.

(Insert clip: <https://www.youtube.com/watch?v=Rzxr9FeZf1g> 5:26-5:34)

For instance, the US National Library of Medicine explains that parents often worry that vaccines cause autism and other negative health effects. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4869767/> A prime target for anti-vaccination movements across the world is the MMR vaccine, against measles, mumps, and rubella.

(Insert Clip: <https://www.youtube.com/watch?v=Rzxr9FeZf1g> 4:00 – 4:15)

The issue with this is that all of these diseases are able to spread extremely fast among groups not properly vaccinated. Between 2016 and 2018, cases of measles in Europe rose from just over 5,000 cases to nearly 83,000, according to the World Health Organization. (Source: <https://www.youtube.com/watch?v=VqLmNI0W1Xg>) These issues seem likely to only get worse over the coming years.

(Insert clip: <https://www.youtube.com/watch?v=VqLmNI0W1Xg> 0:30 – 0:42)

In order to figure out why the anti-vaccine movement is so strong, it’s important to understand how the internet has spread the misinformation. According to publichealth.org, the idea that vaccines cause autism was first published online in a 1997 study by British surgeon Andrew Wakefield, who claimed that the MMR vaccine was increasing autism rates in British children. This paper then spread like wildfire on online communities, and was cited for years as a reason not to vaccinate children. The paper has since been completely discredited due to ethical violations, errors in procedure, and financial conflicts of interest and has been fully retracted.

(Insert clip: <https://www.youtube.com/watch?v=dZPxKUYcbV8> 0:46-0:56 potentially extend to 1:03)

How does the internet affect the spread of this misinformation? Groups on social media websites such as facebook and twitter are a hub for misinformation.

(<https://www.youtube.com/watch?v=7VG_s2PCH_c&t=77s>Insert clip: 3:21-3:30)

Take, for instance, Facebook Group “Texans for Vaccine Choice”. They claim that vaccines are dangerous, and the companies behind them simply vaccinate children for corporate profit. They also claim that the chemical components of vaccines are extremely harmful. This false idea is then shared to thousands of people. As of September 2019, this group has nearly 28,000 followers. Let’s then see the perspective of Marisa, a mother and activist in a debate video from the Youtube Channel Jubilee, who claims the additives in vaccines have caused health problems for herself.

(Insert clip <https://www.youtube.com/watch?v=WQptarOLSBU> 3:14-3:29)

The two chemicals seen as dangers by anti-vaccination campaigns are formaldehyde and thimerosol. According to the CDC, although vaccines do contain formaldehyde, the chemical is naturally found in the body at levels higher than that in vaccines. Therefore, there will be no effect on the body. As for thimerosal, it is *only* in multi-dose vials of the flu vaccine, and even then is not the same form of mercury that causes mercury poisoning. It will never build up in the body from vaccines because there is such a tiny amount of it, and the body processes it differently than any other type of mercury.

The consequences of these internet misinformation campaigns can have very real consequences, especially among tight-knit communities

<https://www.youtube.com/watch?v=7VG_s2PCH_c&t=77s> 4:47-5:03

So what can the internet do to stop it? As of September 2019, facebook and Instagram have developed new, educational pop-ups by the CDC and World Health Organization whenever someone searches for vaccine-related content on either platform. Platforms such as Amazon have also pulled anti-vax documentaries, and Pintrest has turned off the search related feature for anti-vaccination tags (<https://www.theguardian.com/society/2019/aug/28/pinterest-anti-vaccine-combat-health-misinformation>). As long as the internet continues to become more and more diligent about fighting vaccine misinformation, parents will be able to make the right decisions for their kids without the negative propaganda.

(Outro Music)