

She Said: Should mandatory vaccinations exist?

Vaccines are no stranger to students. These pesky shots are definitely not the most convenient—most of us have probably had to rearrange our schedules for an afternoon to get them at our annual check-up before the first day of school. So, some people opt to not receive them. However, vaccines help us build up biological immunity against certain infectious diseases, and not receiving them puts both one and one's fellow community members at risk for contracting disease. This article hopes to dispel medical-related qualms commonly cited by people who oppose vaccination:

"There is no need for vaccines." Yes, there have been improvements in medicine, sanitation, infrastructure, and education, leading to improved societal health and news reports of disease outbreaks in the United States being uncommon. However, decreases in the incidence of vaccine-preventable diseases have coincided with the advent of the vaccinations against them, and thus claims against vaccines are misled by their own success. If people increasingly refuse vaccines, this success can be reversed. Regardless of whether the incidence of these diseases had decreased to this extent or not, it is important to remember that 1) foreigners traveling to the United States (or even US citizens themselves returning from trips abroad) can bring some unwanted, infectious 'souvenirs' and 2) people who are allergic or unresponsive to vaccines are not immunized and depend on the assurance of 'herd' immunity, immunity conferred to a population that has a high proportion of its constituents being vaccinated.

"Vaccines cause autism." In the late nineties and early 200s, 'scientific' studies, headed by British then-physician Andrew Wakefield, were published claiming that the Measles, Mumps, and Rubella (MMR) vaccine causes autism. These studies had **serious** methodological flaws, were repudiated by studies showing the contrary, and were ultimately retracted, along with Wakefield's medical license. Although they were nothing more than a sensationalized tabloid headline, these studies unfortunately had an indelible impact and have thwarted the medical and scientific communities' attempts to improve the health of the population. Other post-hoc assertions that ailments that occur or are diagnosed in childhood are caused by vaccines should similarly be regarded cautiously.

"Receiving multiple vaccinations at once is harmful." Children can oftentimes receive multiple vaccinations during one visit, which is understandably frightening. The way vaccines trigger immunity is by exposing the individual to a weakened, if not killed, version of the pathogen behind the disease the vaccine aims to prevent, and so multiple vaccines technically implies multiple pathogens. However, people, children especially, are exposed to numerous **live** pathogens every day, but generally *do not* become sick every day—showing that their immune system is able to handle it. So, if there is no health risk posed by it, receiving multiple vaccines in one visit net beneficial compared to spreading them out because it saves time, money, and emotional distress, and aims to build protection as early as possible.

So yes, it would be nice to have you or your future child's fun days in the sun uninterrupted by a car ride to the doctor, and to leave with just a lollipop, not the hurt of a needle's pinch and a sore upper arm. But before indulging this fantasy, make sure that you are not indulging false, unscientifically backed information.