

## The Federation of American Societies for Experimental Biology: Position Statement on Vaccination

The Federation of American Societies for Experimental Biology (FASEB) strongly supports the use of immunizations to protect populations against vaccine-preventable diseases. Vaccines prevent illness, disability, or death from infectious diseases such as whooping cough, meningitis, and measles.<sup>1</sup>

Vaccinations are one of the most successful and cost-effective public health interventions ever.<sup>2</sup> More than 322 million cases of disease in the United States are estimated to be prevented in children born between 1994 and 2013.<sup>3</sup> With the exception of safe drinking water,<sup>3</sup> no other single health measure has saved as many lives as vaccines, including the introduction of antibiotics.<sup>4</sup> Vaccines have been so successful that smallpox, a once devastating disease, was eradicated from the planet in 1980. As a consequence of widespread vaccination, no cases of polio have originated in the United States since 1979. Vaccines continue to prevent two to three million deaths worldwide each year as calculated by the World Health Organization (WHO).<sup>5</sup> The Centers for Disease Control and Prevention (CDC) reports 24 diseases that are vaccine preventable, including nearly a dozen childhood diseases whose incidence have dramatically decreased compared to when vaccines were unavailable.<sup>6</sup> In the United States, immunization is estimated to prevent approximately 43,000 early deaths and save \$13.5 billion dollars in direct costs and close to \$70 billion in total societal costs for a cohort of children born in 2009.<sup>7</sup> Continued funding for vaccine development is critical for defending against emerging infectious diseases such as influenza, Zika virus, and Ebola.

FASEB is concerned that misinformation about the safety and efficacy of vaccines leads to lower rates of immunization. Vaccines are safe and well-tolerated when administered following the recommended U.S. Advisory Committee on Immunization Practices immunization schedule.<sup>8</sup> According to the CDC, the vaccine supply in the United States is the safest in history, and there is no evidence to support allegations that vaccines cause autism.<sup>9</sup> Some vaccines protect not only the individuals who receive them but entire populations, offering what is known as community immunity. If vaccination rates decrease, people with compromised immune systems and infants too young to be vaccinated will succumb to deadly infections circulated by the unvaccinated. FASEB strongly supports the use of vaccination to prevent the spread of harmful, contagious infections. In summary, vaccines are effective, safe, and they prevent illness, disability, and death due to disease. If only a fraction of the population is not vaccinated, it will compromise the health and well-being of society.

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<sup>1</sup> Patlak M. "Vaccines: Essential Weapons in the Fight Against Disease." Federation of American Societies for Experimental Biology. *Breakthroughs in Bioscience*. 2015.

<sup>2</sup> Centers for Disease Control and Prevention (CDC). Ten great public health achievements—United States, 2001-2010. *MMWR Morb Mortal Wkly Rep*. 2011;60(19):619–623.

<sup>3</sup> <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6316a4.htm>

<sup>4</sup> Plotkin, SA, Orenstein, WA, & Offit PA. (2008). *Vaccines*. (5<sup>th</sup> ed.) Elsevier, Inc.

<sup>5</sup> <http://www.who.int/mediacentre/factsheets/fs378/en/>

<sup>6</sup> <https://www.cdc.gov/vaccines/vpd/vaccines-diseases.html>

<sup>7</sup> Zhou F, Shefer A, Wenger J, Messonnier M, et al. Economic Evaluation of the Routine Childhood Immunization Program in the United States, 2009. *Pediatrics* 2014;133:1-9.

<sup>8</sup> "The Childhood Immunization Schedule and Safety," Health and Medicine Division (HMD) of the National Academies of Science, Engineering and Medicine. January 16, 2013

<sup>9</sup> <https://www.cdc.gov/vaccinesafety/concerns/autism.html>