



THE AMERICAN ASSOCIATION OF
IMMUNOLOGISTS

Statement of Clifford V. Harding, M.D., Ph.D.
Chair, Committee on Public Affairs
The American Association of Immunologists (AAI)
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The American Association of Immunologists (AAI), the largest professional association of immunologists in the world, representing more than 7,600 basic and clinical immunologists, strongly supports the use of vaccines to prevent disease. Recent outbreaks have brought increased attention to vaccine-preventable diseases and have highlighted the need for robust and timely immunization to reduce preventable sicknesses and deaths. AAI strongly urges full adherence to recommended vaccination schedules and views vaccines as efficacious for individuals and crucial to public health.

Vaccines prime the body's immune system to generate a memory of the infectious agent, which results in immediate defense by the immune system if the individual is exposed again. A highly effective practice, vaccination has been used to rid the United States - and other regions of the world - of many communicable and potentially deadly diseases, including smallpox, diphtheria, and polio.

Public health data demonstrate the enormous benefit of vaccines to society. According to the Centers for Disease Control and Prevention (CDC), prior to the measles vaccine, over half a million people in the U.S. were infected and nearly 500 people died yearly. After many years of widespread vaccination, "the annual number of [measles] cases has ranged from a low of 37 in 2004 to a high of 644 in 2014", with two or fewer deaths in each of the years reported (2004-13).^{1,2} With regard to influenza, the CDC estimates that if 70% of the U.S. population were vaccinated against influenza, an estimated 2.3 million medically treated illnesses and 42,000 hospitalizations could be prevented every year.³ In total, the CDC estimates that immunizations administered between 1994 and 2013 will prevent 732,000 deaths, 322 million illnesses, and 21 million hospitalizations.⁴

Vaccines improve individual and public health not only by preventing disease in those who are vaccinated but also by helping to protect those who are unable to be vaccinated, including newborns, children with leukemia, and children and adults with compromised immune systems. This protection is due to a phenomenon known as herd immunity, which occurs in a community

where immunization has reached a critical mass, such that most members of the community are protected because there are fewer opportunities for an outbreak.⁵

Research has repeatedly confirmed that vaccinations are safe and highly effective for all healthy children and adults,⁶ and any suggestions to the contrary have been discredited.⁷ Ongoing vaccine research continually reaffirms its safety and efficacy, including the number of vaccines administered at any one time and the recommended vaccination schedule.⁸

AAI joins our colleagues at the American Academy of Family Physicians; the American Academy of Pediatrics; the American College of Obstetricians and Gynecologists; the American College of Physicians-American Society of Internal Medicine; the American Medical Association; the American Nurses Association; the Association of State and Territorial Health Officials; the Infectious Diseases Society of America; the Institute of Medicine (IOM) of the National Academy of Sciences; the National Association of County & City Health Officials; and the Pediatric Infectious Diseases Society, among many other professional scientific societies and health-related organizations,⁹ in strong support of widespread and timely immunizations against vaccine-preventable diseases.

¹ <http://www.cdc.gov/measles/hcp/index.html>

² <http://www.cdc.gov/nchs/products/nvsr.htm>; data on deaths in 2014 have not yet been reported.

³ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6349a2.htm>

⁴ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6316a4.htm>

⁵ <http://www.niaid.nih.gov/topics/Pages/communityImmunity.aspx>

⁶ All individuals should consult with a physician prior to vaccination. Infants should receive vaccinations under the guidance of a physician and on a recommended schedule.

⁷ For a selection of references, please see: Maglione, M.A., Das, L., Raaen, L., Smith, A., Chari, R., Newberry, S., Shanman, R., Perry, T., Goetz, M.B., and Gidengil, C. 2014. Safety of vaccines used for routine immunization of U.S. children: a systematic review. *Pediatrics*, 134(2), 325-37.; DeStefano, F., Price, C.S., and Weintraub, E.S. 2013. Increasing exposure to antibody-stimulating proteins and polysaccharides in vaccines is not associated with risk of autism. *The Journal of Pediatrics*, 163(2):561-7.; Hurley, A.M., Tadrous, M., and Miller, E.S. 2010. Thimerosal-containing vaccines and autism: a review of recent epidemiologic studies. *The Journal of Pediatric Pharmacology and Therapeutics*, 15(3):173-81.; Hornig, M., Briese, T., Buie, T., Bauman, M.L., Lauwers, G., Siemietzki, U., Hummel, K. Rota, P.A., Bellini, W.J., O'Leary, J.J., Sheils, O., Alden, E., Pickering, L., and Lipkin, W.I. 2008. Lack of association between measles virus vaccine and autism with enteropathy: a case-control study. *PLoS ONE*, 3(9):e3140.

⁸ For a selection of references, please see: Curtis, B., Liberato, N., Rulien, M., Morrisroe, K., Kenney, C., Yutuc, V., Ferrier, C., Marti, C.N., Mandell, D., Burbacher, T.M., Sackett, G.P., and Hewitson, L. 2015. Examination of the Safety of Pediatric Vaccine Schedules in a Non-Human Primate Model: Assessments of Neurodevelopment, Learning, and Social Behavior. *Environmental Health Perspectives*, <http://ehp.niehs.nih.gov/1408257/>; The Childhood Immunization Schedule and Safety: Stakeholder Concerns, Scientific Evidence, and Future Studies. 2013. Washington (DC): National Academies Press (US). ISBN-13: 978-0-309-26702-1; Pahud, B.A., Rowhani-Rahbar, A., Glaser, C., Gavali, S., Salibay, C.J., Fireman, B., and Dekker, C.L. 2012. Lack of association between childhood immunizations and encephalitis in California, 1998-2008. *Vaccine*, 30(2):247-53.; Offit, P.A., Quarles, J., Gerber, M.A., Hackett, C.J., Marcuse, E.K., Kollman, T.R., Gellin, B.G., and Landry, S. 2002. Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System? *Pediatrics*, 109(1):124-129.

⁹ http://www.immunize.org/resources/part_us.asp