



# Medical Versus Nonmedical Immunization Exemptions for Child Care and School Attendance

COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, COMMITTEE ON INFECTIOUS DISEASES, COMMITTEE ON STATE GOVERNMENT AFFAIRS, COUNCIL ON SCHOOL HEALTH, SECTION ON ADMINISTRATION AND PRACTICE MANAGEMENT

Routine childhood immunizations against infectious diseases are an integral part of our public health infrastructure. They provide direct protection to the immunized individual and indirect protection to children and adults unable to be immunized via the effect of community immunity. All 50 states, the District of Columbia, and Puerto Rico have regulations requiring proof of immunization for child care and school attendance as a public health strategy to protect children in these settings and to secondarily serve as a mechanism to promote timely immunization of children by their caregivers. Although all states and the District of Columbia have mechanisms to exempt school attendees from specific immunization requirements for medical reasons, the majority also have a heterogeneous collection of regulations and laws that allow nonmedical exemptions from childhood immunizations otherwise required for child care and school attendance. The American Academy of Pediatrics (AAP) supports regulations and laws requiring certification of immunization to attend child care and school as a sound means of providing a safe environment for attendees and employees of these settings. The AAP also supports medically indicated exemptions to specific immunizations as determined for each individual child. The AAP views nonmedical exemptions to school-required immunizations as inappropriate for individual, public health, and ethical reasons and advocates for their elimination.

## abstract

FREE

*This document is copyrighted and is property of the American Academy of Pediatrics and its Board of Directors. All authors have filled conflict of interest statements with the American Academy of Pediatrics. Any conflicts have been resolved through a process approved by the Board of Directors. The American Academy of Pediatrics had neither solicited nor accepted any commercial involvement in the development of the content of this publication.*

*The guidance in this statement does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.*

*All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.*

**DOI:** 10.1542/peds.2016-2145

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2016 by the American Academy of Pediatrics

**FINANCIAL DISCLOSURE:** The authors have indicated they do not have a financial relationship relevant to this article to disclose.

**FUNDING:** No external funding.

**POTENTIAL CONFLICT OF INTEREST:** The authors have indicated they have no potential conflicts of interest to disclose.

## BACKGROUND

### Principles of Childhood Immunization and Community Immunity

Childhood immunization is one of the greatest accomplishments of modern medicine. In the United States 2009 birth cohort, routine childhood immunization will prevent approximately 42 000 early deaths

**To cite:** AAP COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, AAP COMMITTEE ON INFECTIOUS DISEASES, AAP COMMITTEE ON STATE GOVERNMENT AFFAIRS, AAP COUNCIL ON SCHOOL HEALTH, AAP SECTION ON ADMINISTRATION AND PRACTICE MANAGEMENT. Medical Versus Nonmedical Immunization Exemptions for Child Care and School Attendance. *Pediatrics*. 2016;138(3):e20162145

and 20 million cases of disease, saving \$13.5 billion in direct costs and \$68.8 billion in societal costs.<sup>1</sup>

However, vaccines are not 100% effective in individuals receiving them. Certain infants, children, and adolescents cannot safely receive specific vaccines because of age or specific health conditions. These individuals benefit from the effectiveness of immunizations through a mechanism known as community immunity (also known as “herd” immunity). Community immunity occurs when nearly all individuals for whom vaccine is not contraindicated have been appropriately immunized, minimizing the risk of illness or spread of a vaccine-preventable infectious agent to those who do not have the direct benefit of immunization. Although there is variance for levels of immunization required to generate community immunity specific to each disease and vaccine, it is generally understood that population immunization rates of at least 90% are required, as reflected in the Healthy People 2020 goals.<sup>2</sup> Certain highly contagious diseases, such as pertussis and measles, require a population immunization rate of  $\geq 95\%$  to achieve community immunity.

### **School Immunization Requirements**

Each of the 50 states and the District of Columbia and Puerto Rico have requirements for proof of immunization for attendees of child care centers and public schools, and nearly all have laws covering private schools as well.<sup>3</sup> Some states allow local school boards to set requirements for some vaccines, although the majority set requirements at the state level. These policies are designed to protect children attending child care and school from vaccine-preventable diseases by creating a learning environment with a very high rate of community immunity. In addition,

vocational schools, colleges, and universities also have immunization requirements. As an additional public health benefit, immunization requirements serve as a strong incentive for parents and families to immunize their children according to the schedule recommended by the Centers for Disease Control and Prevention and the American Academy of Pediatrics (AAP). Public health data show that vaccine requirements for child care and/or school entry result in increased community immunization rates<sup>4</sup> and decreased incidence of those vaccine-preventable diseases.<sup>5,6</sup>

### **Medical Immunization Exemptions**

Although there are fairly consistent standards for required immunizations across the United States, every state, the District of Columbia, and Puerto Rico have allowances to exempt children from school-required immunization for medically indicated reasons. Examples of such include allergy to a vaccine component, previous significant adverse reaction to a vaccine or its components, or other underlying health condition such as an immunosuppressed organ transplant recipient.<sup>7</sup> Almost half of states have laws that distinguish between temporary and permanent medical contraindications,<sup>3</sup> with nearly another half of these states requiring annual or more frequent health care provider recertification for the medical exemptions. Because only a very small proportion of children have medical conditions prohibiting specific immunizations, medically indicated exemptions, when granted appropriately, typically do not compromise community immunity. It is this specific group of children that depends on community immunity for protection.

### **Nonmedical Immunization Exemptions**

Although not required under current federal constitutional and

statutory law,<sup>8</sup> almost all states allow exemptions from school attendance immunization requirements on the basis of religious belief, and almost half of the states allow philosophical (also known as personal-belief) exemptions.

Although nearly ubiquitous, nonmedical exemption regulations are quite heterogeneous from state to state in terms of how they are granted, used, and maintained.<sup>3</sup> Some states explicitly exclude philosophical and personal-belief exemptions and define these as not falling under the scope of religious exemptions. More than half of the states legally allow for exclusion of exempted students or can withdraw nonmedical exemptions during outbreaks, epidemics, or emergencies. More than one-quarter of the states require parental notarization or affidavit confirming either a religious or personal-belief justification in applying for a nonmedical school immunization exemption. A number of states have laws requiring parent/guardian education by health departments or health care providers about the benefits of vaccines and the risks and consequences of not receiving recommended childhood immunizations.

### **PUBLIC HEALTH EFFECTS OF IMMUNIZATION EXEMPTIONS**

#### **Exemption Rates and Vaccine-Preventable Disease Incidence**

Legislation requiring immunization before school entry increases immunization rates and dramatically decreases the incidence of vaccine-preventable diseases.<sup>9</sup> Examples of these include immunization against measles and chickenpox. Likewise, higher rates of immunization exemptions in communities correlate with higher rates of vaccine-preventable illnesses and disease outbreaks, such as pertussis and measles.<sup>10-13</sup>

Although overall rates of many required immunizations have increased or remained steady over the past 10 years, recent studies show that unvaccinated children are often geographically clustered within communities<sup>14</sup> and have corresponding higher rates of immunization exemption. This clustering reflects the fact that families with similar sociocultural beliefs often live near each other or attend the same schools which results in population clusters within larger communities with significantly lower immunization rates that are insufficient to sustain community immunity. This phenomenon results in disease outbreaks when a vaccine-preventable illness is introduced into these communities.

### Exemption Rates and Legal Requirements

States with less rigorous requirements for nonmedical exemptions and those that grant permanent medical exemptions have significantly higher vaccine exemption rates than those states with more rigorous requirements or those that only grant temporary exemptions.<sup>15</sup>

States that offer personal-belief exemptions have had steady increases in the number of exemptions over time. Religious exemptions have increased for states that do not offer personal-belief/philosophical exemptions but have, through regulatory language, broadly defined religion for the purposes of obtaining vaccine exemption. The ease of requirements to obtain nonmedical exemptions, especially those of personal belief, can have a significant impact on the rate of exemptions and immunizations.<sup>16</sup> Oregon, which in 2014 began requiring parental completion of an educational module on the benefits of vaccines before allowing a certified exemption, saw a 17% decrease in

the number of exemptions granted the following school year.

### JUSTIFICATION FOR IMMUNIZATION REQUIREMENTS

#### Legal Justification

Resistance and legal challenges to compulsory vaccination laws have existed since the early 19th century. In *Jacobson versus Massachusetts*,<sup>8</sup> the court found legislative vaccine mandates to be constitutional as a means of protecting public health and public safety. In *Zucht versus King* in 1922, the Supreme Court upheld a local ordinance requiring vaccination as a condition for school attendance.<sup>17</sup> In the 1944 case *Prince versus Commonwealth of Massachusetts*, the court ruled that the constitutional rights of religion or parenthood were not beyond limitation and that states had the authority to protect the welfare of children and the community. Although the specific case was with regard to child labor laws, the court extended its language to encompass both religious and personal activities such that, "The right to practice religion freely does not include liberty to expose the community or the child to communicable disease or the latter to ill health or death."<sup>18</sup> Since these rulings, there have been numerous challenges to state and local immunization requirements (eg, *Workman versus Mingo County Schools*, *Phillips versus City of New York*). All of these challenges failed.

#### Ethical Considerations

Parents and the government both have a responsibility in maintaining the health of children. There is a societal interest in protecting the health of the individual child and society as a whole. Although society generally believes that parents or guardians are best situated to understand their child's unique needs, including health care needs, and should participate in caring and

thoughtful medical decision-making, this parental responsibility is not an absolute right. With this in mind, it is critical to design childhood immunization exemption policies so that they clearly serve the best interests of both the individual child and the community.

Parents are expected to consider the best interest of their child in medical decision-making, focusing on their child's medical, emotional, and social needs, rather than their own social or emotional interests. In general, the state is empowered to overrule parental medical decision-making only when such decision-making or refusal of care places a child at significant risk of serious harm. Vaccination is unique within the realm of medical interventions because it not only provides a benefit to the patient who is vaccinated but also confers a significant public health benefit in terms of community immunity. Similarly, refusal of vaccination not only puts the individual child at risk but also increases societal risk by decreasing community immunity and adding to a population of unimmunized individuals within which vaccine-preventable disease may spread. Declining community immunity may be a significant risk for children and adults with medical contraindications to vaccination, who rely on community immunity for protection from vaccine-preventable diseases. Thus, nonmedical exemptions effectively disenfranchise people with medically indicated contraindications to vaccines from receiving equal protection under public health policy.

Several pediatric bioethicists have argued against the elimination of nonmedical exemptions by citing the ethical Principle of Least Restrictive Means for public health policy.<sup>19</sup> This principle recognizes that where multiple options exist to achieve public health goals, "that the full force of state authority and power

should be reserved for exceptional circumstances and that more coercive methods should be employed only when less coercive methods have failed.<sup>20</sup> However, this principle was developed to protect individuals from serious deprivations of personal liberty. The current immunization requirements that some seek to avoid with nonmedical exemptions are limited in scope to attendance in child care or school settings and are not requirements for the mandatory vaccination or quarantine of individuals who are unimmunized. Neither is there an undue burden of health risk to the individual in that immunization safety is scientifically well established. The public health value and benefit from requiring childhood immunizations for child care and school attendance versus allowing nonmedical exemptions are not equal alternatives. Nonmedical exemptions negatively affect community immunity and have indeed failed, as documented in the medical literature.<sup>12</sup> In addition, the heterogeneous collections of regulations covering nonmedical exemptions, they actually present an ethical dilemma of unfair implementation and application to families.<sup>21</sup>

## CONCLUSIONS

Immunization requirements for child care and school attendance are an effective means of protecting people from vaccine-preventable diseases, both by direct protection from the vaccine and indirect protection via community immunity. Immunization requirements also have a beneficial effect on timely immunization of children. Because rare medically recognized contraindications for specific individuals to receive specific vaccines exist, legitimate medical exemptions to immunization requirements are important to observe. However, nonmedical exemptions to immunization

requirements are problematic because of medical, public health, and ethical reasons and create unnecessary risk to both individual people and communities.

## RECOMMENDATIONS

1. The AAP supports laws and regulatory measures that require certification of immunization to attend child care and school as a sound means of providing a safe environment for attendees and employees of these settings.
2. The AAP supports medically indicated exemptions to specific immunizations as determined for each individual student.
3. The AAP recommends that all states and the District of Columbia use their public health authority to eliminate nonmedical exemptions from immunization requirements.
4. The AAP recommends that all child care centers, schools, and other covered entities comply with state laws and regulations requiring current and accurate documentation of appropriate immunization status and appropriate medical exemptions of attendees and students.
5. The AAP recommends that the appropriate public health authorities provide the community with information about immunization rates in child care centers, schools, and other covered entities and determine whether there are risks to community immunity on the basis of this information.

## LEAD AUTHORS

Geoffrey R. Simon, MD, FAAP  
Carrie Byington, MD, FAAP  
Christoph Diasio, MD, FAAP  
Anne R. Edwards, MD, FAAP  
Breena Holmes, MD, FAAP

## COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, 2015–2016

Geoffrey R. Simon, MD, FAAP, Chairperson

Alexy D. Arauz Boudreau, MD, MPH, FAAP  
Cynthia Baker, MD, FAAP  
Graham A. Barden III, MD, FAAP  
Jesse Hackell, MD, FAAP  
Amy Hardin, MD, FAAP  
Kelley Meade, MD, FAAP  
Scot Moore, MD, FAAP  
Julia E. Richerson, MD, FAAP

## STAFF

Elizabeth Sobczyk, MPH, MSW

## COMMITTEE ON INFECTIOUS DISEASES, 2015–2016

Carrie L. Byington, MD, FAAP, Chairperson  
Yvonne A. Maldonado, MD, FAAP, Vice Chairperson  
Elizabeth D. Barnett, MD, FAAP  
H. Dele Davies, MD, MS, MHCM, FAAP  
Kathryn M. Edwards, MD, FAAP  
Ruth Lynfield, MD, FAAP  
Flor M. Munoz, MD, FAAP  
Dawn Nolt, MD, MPH  
Ann-Christine Nyquist, MD, MSPH, FAAP  
Mobeen H. Rathore, MD, FAAP  
Mark H. Sawyer, MD, FAAP  
William J. Steinbach, MD, FAAP  
Tina Q. Tan, MD, FAAP  
Theoklis E. Zaoutis, MD, MSCE, FAAP

## EX OFFICIO

David W. Kimberlin, MD, FAAP – *Red Book* Editor  
Michael T. Brady, MD, FAAP – *Red Book* Associate Editor  
Mary Anne Jackson, MD, FAAP – *Red Book* Associate Editor  
Sarah S. Long, MD, FAAP – *Red Book* Associate Editor  
Henry H. Bernstein, DO, MHCM, FAAP – *Red Book* Online Associate Editor  
H. Cody Meissner, MD, FAAP – Visual *Red Book* Associate Editor

## LIAISONS

Douglas Campos-Outcalt, MD, MPA – *American Academy of Family Physicians*  
Amanda C. Cohn, MD, FAAP – *Centers for Disease Control and Prevention*  
Karen M. Farizo, MD – *US Food and Drug Administration*  
Marc Fischer, MD, FAAP – *Centers for Disease Control and Prevention*  
Bruce G. Gellin, MD, MPH – *National Vaccine Program Office*  
Richard L. Gorman, MD, FAAP – *National Institutes of Health*  
Natasha Halasa, MD, MPH, FAAP – *Pediatric Infectious Diseases Society*  
Joan L. Robinson, MD – *Canadian Paediatric Society*  
Jamie Deseda-Tous, MD – *Sociedad Latinoamericana de Infectología Pediátrica*  
Geoffrey R. Simon, MD, FAAP – *Committee on Practice Ambulatory Medicine*



Jeffrey R. Starke, MD, FAAP – *American Thoracic Society*

## STAFF

Jennifer M. Frantz, MPH

## COMMITTEE ON STATE GOVERNMENT AFFAIRS, 2015–2016

J. Gary Wheeler, MD, FAAP, Chairperson  
Anne R. Edwards, MD, FAAP, Chairperson Emeritus  
Tami H. Brooks, MD, FAAP  
Nancy R. Graff, MD, FAAP  
Michael Louis McManus, MD, MPH  
Victor Hugo Perez, MD, MPH, FAAP  
Marsha Dendler Raulerson, MD, FAAP

## STAFF

Ian Van Dinther

## COUNCIL ON SCHOOL HEALTH, 2015–2016

Breena Holmes, MD  
Mandy Allison, MD, MEd, MSPH  
Richard Ancona, MD  
Elliott Attisha, DO  
Nathaniel Beers, MD, MPA  
Cheryl De Pinto, MD, MPH  
Peter Gorski, MD, MPA  
Chris Kjolhede, MD, MPH  
Marc Lerner, MD  
Adrienne Weiss-Harrison, MD  
Thomas Young, MD

## LIAISONS

Nina Fekaris, MS, BSN, RN, NCSN – *National Association of School Nurses*  
Veda Johnson, MD – *School Based Health Alliance*  
Sheryl Kataoka, MD, MSHS – *American Academy of Child and Adolescent Psychiatry*  
Sandra Leonard, DNP, RN, FNP – *Centers for Disease Control and Prevention*

## STAFF

Madra Guinn-Jones, MPH

## SECTION ON ADMINISTRATION AND PRACTICE MANAGEMENT, 2015–2016

Christoph Robert Diasio, MD, FAAP, Chairperson  
Kathleen K. Cain, MD, FAAP  
Herschel Robert Lessin, MD, FAAP  
Jeanne Marie Marconi, MD, FAAP  
Gail Ann Schonfeld, MD, FAAP  
Budd N. Shenkin, MD, FAAP  
Rudolph Wong, MD, Section on Medical Students, Residents, and Fellowship Trainees Liaison  
John Eiland Moore MD, FAAP, Education Program Chair

## STAFF

Elisha Ferguson

## REFERENCES

1. Zhou F, Shefer A, Wenger J, et al. Economic evaluation of the routine childhood immunization program in the United States, 2009. *Pediatrics*. 2014;133(4):577–585
2. HealthyPeople.gov. Immunization and infectious diseases. Available at: <https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives>
3. Centers for Disease Control and Prevention. State School and Childcare Vaccination Laws. Available at: <http://www.cdc.gov/phlp/publications/topic/vaccinations.html>. Accessed August 3, 2016
4. Davis MM, Gaglia MA. Associations of daycare and school entry vaccination requirements with varicella immunization rates. *Vaccine*. 2005;23(23):3053–3060
5. Ernst KC, Pogreba-Brown K, Rasmussen L, Erhart LM. The effect of policy changes on hepatitis A vaccine uptake in Arizona children, 1995–2008. *Public Health Rep*. 2011;126(suppl 2):87–96
6. Lopez AS, Kolasa MS, Seward JR. Status of school entry requirements for varicella vaccination and vaccination coverage 11 years after implementation of the Varicella Vaccination program. *J Infect Dis*. 2008;197(suppl 2):S76–S81
7. Centers for Disease Control and Prevention. Chart of Contraindications and Precautions to Commonly Used Vaccines. Available at: [www.cdc.gov/vaccines/hcp/admin/contraindications-vacc.html](http://www.cdc.gov/vaccines/hcp/admin/contraindications-vacc.html). Accessed August 3, 2016
8. *Jacobson v Massachusetts*, 197 US 11 (1905)
9. Diekema DS. Personal belief exemptions from school vaccination requirements. *Annu Rev Public Health*. 2014;35:275–292
10. Omer SB, Pan WK, Halsey NA, et al. Nonmedical exemptions to school immunization requirements: secular trends and association of state policies with pertussis incidence. *JAMA*. 2006;296(14):1757–1763
11. Imdad A, Tserenpuntsag B, Blog DS, et al. Religious exemptions for immunization and risk of pertussis in New York State, 2000–2011. *Pediatrics*. 2013;132(1):37–43
12. Phadke VK, Bednarczyk RA, Salmon DA, Omer SB. Association between vaccine refusal and vaccine-preventable diseases in the United States: a review of measles and pertussis. *JAMA*. 2016;315(11):1149–1158
13. Atwell JE, Van Otterloo J, Zipprich J, et al. Nonmedical vaccine exemptions and pertussis in California, 2010. *Pediatrics*. 2013;132(4):624–630
14. Hill HA, Elam-Evans LD, Yankey D, Singleton JA, Kolasa M. National, state, and selected local area vaccination coverage among children aged 19–35 months—United States, 2014. *MMWR Morb Mortal Wkly Rep*. 2015;64(33):889–896
15. Blank NR, Caplan AL, Constable C. Exempting schoolchildren from immunizations: states with few barriers had highest rates of nonmedical exemptions. *Health Aff (Millwood)*. 2013;32(7):1282–1290
16. Stadlin S, Bednarczyk RA, Omer SB. Medical exemptions to school immunization requirements in the United States—association of state policies with medical exemption rates (2004–2011). *J Infect Dis*. 2012;206(7):989–992
17. *Zucht v King*, 260 US 174 (1922)
18. *Prince v Commonwealth of Massachusetts*, 321 US 158 (1944)
19. Opel DJ, Kronman MP, Diekema DS, et al. Childhood vaccine exemption policy: the case for a less restrictive alternative. *Pediatrics*. 2016;137(4):e20154230
20. Upshur RE. Principles for the justification of public health intervention. *Can J Public Health*. 2002;93(2):101–103
21. Kass NE. An ethics framework for public health. *Am J Public Health*. 2001;91(11):1776–1782

**Medical Versus Nonmedical Immunization Exemptions for Child Care and School Attendance**  
COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, COMMITTEE ON INFECTIOUS DISEASES, COMMITTEE ON STATE GOVERNMENT AFFAIRS, COUNCIL ON SCHOOL HEALTH and SECTION ON ADMINISTRATION AND PRACTICE MANAGEMENT  
*Pediatrics* originally published online August 29, 2016;

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="http://pediatrics.aappublications.org/content/early/2016/08/25/peds.2016-2145">http://pediatrics.aappublications.org/content/early/2016/08/25/peds.2016-2145</a>
<b>References</b>	This article cites 14 articles, 5 of which you can access for free at: <a href="http://pediatrics.aappublications.org/content/early/2016/08/25/peds.2016-2145#BIBL">http://pediatrics.aappublications.org/content/early/2016/08/25/peds.2016-2145#BIBL</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>Infectious Disease</b> <a href="http://www.aappublications.org/cgi/collection/infectious_diseases_sub">http://www.aappublications.org/cgi/collection/infectious_diseases_sub</a> <b>Vaccine/Immunization</b> <a href="http://www.aappublications.org/cgi/collection/vaccine:immunization_sub">http://www.aappublications.org/cgi/collection/vaccine:immunization_sub</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="http://www.aappublications.org/site/misc/Permissions.xhtml">http://www.aappublications.org/site/misc/Permissions.xhtml</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="http://www.aappublications.org/site/misc/reprints.xhtml">http://www.aappublications.org/site/misc/reprints.xhtml</a>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## **Medical Versus Nonmedical Immunization Exemptions for Child Care and School Attendance**

COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, COMMITTEE ON INFECTIOUS DISEASES, COMMITTEE ON STATE GOVERNMENT AFFAIRS, COUNCIL ON SCHOOL HEALTH and SECTION ON ADMINISTRATION AND PRACTICE MANAGEMENT

*Pediatrics* originally published online August 29, 2016;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/early/2016/08/25/peds.2016-2145>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2016 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

