

# Vaccines: What About Immunocompromised Schoolchildren?



## 1. WHAT DOES IT MEAN TO BE IMMUNOCOMPROMISED?

Immunocompromised children have weakened immune systems that prevent them from optimally fighting infections on their own. Consequently, they may be at increased risk of complications from infectious diseases and require additional precautions and treatments.



## 2. CAN IMMUNOCOMPROMISED CHILDREN ATTEND SCHOOL?

The Immune Deficiency Foundation states, “Years ago, a diagnosis of a PI [primary immune deficiency] meant extremely compromised lives... Today, with early diagnosis and appropriate therapies, many patients diagnosed with a PI can live healthy, productive lives.” Modern treatments have reduced the risk of many immunocompromised children so that they are able to attend school.<sup>1</sup>



Children who are not severely immunocompromised can attend school with the approval of their doctor.



## 3. CAN IMMUNOCOMPROMISED SCHOOLCHILDREN BE VACCINATED?

Immunocompromised schoolchildren have the option to receive all the vaccines licensed for children in the United States, except for the live virus vaccines (such as vaccines targeting measles, mumps, rubella, or varicella infections).<sup>2</sup> Although vaccination often results in protective levels of antibodies in immunocompromised children,<sup>3-7</sup> clinical vaccine safety trials typically exclude immunocompromised subjects.<sup>8</sup> In addition, vaccines have not been

evaluated for their potential to cause cancer, genetic mutations or impaired fertility in the general or immunocompromised population.<sup>9</sup> Due to these limitations, it is not known whether the benefit of vaccinating an immunocompromised child outweighs the risk of vaccine injury to that child.



## 4. DOES THE VACCINATION STATUS OF OTHER SCHOOLCHILDREN POSE A SIGNIFICANT RISK TO IMMUNOCOMPROMISED SCHOOLCHILDREN?

The vaccination status of other schoolchildren does not pose a significant risk to immunocompromised schoolchildren for the following reasons (Table 1):

- Some vaccines cannot prevent the spread of the bacteria or viruses they target.
- Immune globulin (plasma containing antibodies) is available for immunocompromised children exposed to certain infectious diseases.
- Some infectious diseases rarely cause complications in immunocompromised schoolchildren.
- Not all infectious diseases are contagious.
- Some infectious diseases are not spread in schools.



Immunocompromised schoolchildren are not put at significant risk by the vaccination status of other schoolchildren.

**Table 1: Why the Vaccination Status of Other Schoolchildren Is Not a Significant Risk to Immunocompromised Schoolchildren**



***Some vaccines cannot prevent the spread of the bacteria or viruses they target.***

Children vaccinated with the diphtheria, tetanus, and pertussis (whooping cough) vaccine (DTaP) or the inactivated polio vaccine (IPV) can still be infected with diphtheria-causing bacteria, pertussis bacteria, or poliovirus and spread them to others, even with mild or no symptoms of their own.<sup>10-13</sup> The influenza vaccines (TIV and LAIV) have not been observed to significantly reduce the spread of influenza.<sup>14,15</sup> About half of schoolchildren vaccinated with the measles, mumps, and rubella (MMR) vaccine can still be infected with measles virus and spread it to others, even with mild or no symptoms of their own.<sup>16-19</sup>



***Immune globulin (plasma containing antibodies) is available for immunocompromised children exposed to certain infectious diseases.***

Immune globulin (IG) is available for the prevention of severe symptoms in immunocompromised children exposed to measles or rubella (IG does not provide protection for fetuses of expectant mothers infected with rubella).<sup>20,21</sup> Varicella-zoster immune globulin (VIG) is available for the prevention of severe symptoms in immunocompromised children exposed to varicella (chickenpox).<sup>22</sup> Hepatitis B immune globulin (HBIG) and tetanus immune globulin (TIG) are also available for immunocompromised children.<sup>2</sup>



***Some infectious diseases rarely cause complications in immunocompromised schoolchildren.***

Fatal cases of mumps are very rare in schoolchildren (1 mumps death per 100,000 mumps cases),<sup>23</sup> and immunocompromised children have been observed to recover just as well from mumps as the general population.<sup>24</sup> Severe cases of pertussis or rubella rarely occur in schoolchildren, and being immunocompromised has not been observed to be a significant risk factor for complications of pertussis or rubella in schoolchildren.<sup>25,26</sup>



***Not all infectious diseases are contagious.***

Tetanus is not a communicable disease; that is, it cannot spread from person to person under any circumstances.<sup>27</sup>



***Some infectious diseases are not spread in schools.***

Hepatitis B is not spread by kissing, hugging, holding hands, coughing, sneezing, or sharing eating utensils,<sup>28</sup> and the main routes of hepatitis B transmission (sexual contact, injection drug use, or being born to an infected mother)<sup>29</sup> do not occur in school. Nearly all cases of *Haemophilus influenzae* type b (Hib) occur among children younger than 5 years of age; therefore, nearly all Hib transmission does not occur in school.<sup>30</sup> Human papillomavirus (HPV) is sexually transmitted and is therefore not spread in school.<sup>31</sup>

All references are available at [physiciansforinformedconsent.org/immunocompromised-schoolchildren](https://www.physiciansforinformedconsent.org/immunocompromised-schoolchildren).

These statements are intended for informational purposes only and should not be construed as personal medical advice.

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