



## Vaccines save lives!

Prior to vaccinations, diseases injured or killed thousands of children. The development of vaccines created an opportunity to completely eliminate such diseases.



## How do vaccines work?

Vaccines build immunity to a disease by imitating an infection which causes the body to create antibodies and defensive white blood cells.<sup>1</sup> The defensive white blood cells remain in the body and fight the disease if the body encounters it in the future.<sup>2</sup>

## Why should children get vaccinated?

- Vaccines protect against **25+** serious, and often life-threatening, diseases in the U.S.<sup>3</sup>
- The majority of vaccines appear on the recommended childhood immunization schedule from the Centers for Disease Control and Prevention (CDC).<sup>4</sup>
- Vaccines protect **everyone**, but especially those with vulnerable immune systems including newborns, people with cancer, weak immune systems, elderly people, and transplant patients.<sup>5</sup>

### Vaccines Available to Children

- Diphtheria\***
- Hepatitis A\***
- Hepatitis B\***
- Hib\***
- Human Papillomavirus (HPV)**
- Influenza (Flu)**
- Measles\***
- Meningococcal (Meningitis)**
- Mumps\***
- Pertussis\*(Whooping cough)**
- Pneumococcal Disease\***
- Polio\***
- Rotavirus**
- Rubella\***
- SARS-COV-2 (COVID-19)**
- Tetanus**
- Tuberculosis**
- Varicella (Chickenpox)**

\*Vaccines that are required for school or childcare attendance in Georgia.<sup>6</sup>

**Bolded** vaccines appear on the Child and Adolescent Immunization Schedule.<sup>7</sup>

## Are vaccines safe?

**YES!** Vaccines are safe. While there can be side effects, they are usually minimal (e.g., slight discomfort and redness at the injection site).<sup>8</sup> Serious side effects such as allergic reactions are extremely rare.<sup>9</sup> The benefits of vaccines significantly outweigh the risks.<sup>10</sup>

### Why are parents opting out?

Despite ample evidence of vaccines being safe and effective, some parents are choosing to not vaccinate their children. When children are not vaccinated, they are at risk of life-threatening diseases, including diseases that were once rare.<sup>11</sup>

## Vaccines do NOT cause autism

Since 2003, **9 studies** from the CDC have confirmed the mercury-based ingredient thimerosal is not linked to autism.<sup>12</sup> Additional research provided further evidence by showing that antigens, the substance in vaccines that initiates the body's immune system to create the disease fighting antibodies, were the same in children with and without Autism — indicating that antibody exposure was not related to Autism development.<sup>13</sup> The CDC stresses **vaccines are safe**, necessary to save lives, and there is no link between vaccines and autism.<sup>14</sup>

A study of more than **95,000 children** found that the measles-mumps-rubella (MMR) vaccine did not increase a child's risk of autism.<sup>15</sup>

# Vaccine-Preventable Illnesses

## Polio

- A virus which lives in the infected individual's throat and intestines but can enter the brain and spinal cord and result in paralysis or death<sup>16</sup>
- Spreads from person to person via contact with an infected person's feces; a less common spread can occur through sneezing or coughing<sup>17</sup>
- Vaccine developed 1955<sup>18</sup>
- Can be contracted through contaminated food and unsanitary water<sup>19</sup>

## Tetanus

- Serious disease caused by bacteria, called Clostridium tetani, that produce toxins<sup>20</sup>
- Can be contracted through wounds and burns that are contaminated by the bacteria<sup>21</sup>
- Causes muscle stiffness and spasms, paralysis, and breathing problems<sup>22</sup>
- Treatment usually requires hospitalization<sup>23</sup>
- Vaccine first introduced in late 1940s<sup>24</sup>
- Tetanus has an overall fatality rate of approximately 11%; among unvaccinated individuals, the fatality rate is 22%<sup>25</sup>

## Influenza (Flu)

- Respiratory illness caused by a virus<sup>26</sup>
- Every year since 2010, between 12,000 and 46,000 children under the age of 18 have been hospitalized by the flu<sup>27</sup>
- Vaccine licensed for all civilians in the U.S. during 1945<sup>28</sup>

## Hepatitis A

- Liver infection caused by hepatitis A virus<sup>29</sup>
- Can be contracted from contaminated food, drinks, stool, or sexual contact<sup>30</sup>
- Vaccine developed in 1995<sup>31</sup>

## Hepatitis B

- Liver infection caused by the hepatitis B virus<sup>32</sup>
- Spread when blood and other bodily fluids of an infected person enter an uninfected person<sup>33</sup>
- Vaccine became commercially available in 1981 in the U.S.<sup>34</sup>
- Can be contracted through sexual contact, mother to child during pregnancy, sharing needles, and needle sticks<sup>35</sup>

## Rubella

- Spreads through sneezing and coughing<sup>36</sup>
- Especially dangerous to pregnant women and fetuses<sup>37</sup>
- Vaccine first available in 1969<sup>38</sup>

## Hib

- Haemophilus influenzae type b (Hib) is a bacteria that infects the lining of the brain<sup>39</sup>
- Harms the immune system, causes brain damage and hearing loss, and is sometimes fatal<sup>40</sup>
- Prior to vaccine development, Hib was the leading cause of bacterial meningitis for children under age five<sup>41</sup>
- Can cause severe infections of the lining of the brain and spinal cord (meningitis) and the bloodstream<sup>42</sup>
- Vaccine first licensed in 1987<sup>43</sup>

## Measles

- Very contagious and can be contracted through airborne particles. The virus can stay active for up to 2 hours in the air or on objects<sup>44</sup>
- Especially serious for young children<sup>45</sup>
- Vaccine first available in 1963<sup>46</sup>

# Vaccine-Preventable Illnesses

## **Pertussis (Whooping Cough)**

- Highly contagious and sometimes deadly for infants<sup>47</sup>
- Known for uncontrollable, violent coughing which makes it difficult to breathe<sup>48</sup>
- Vaccine developed in 1930s and used widely by the mid-1940s<sup>49</sup>

## **Pneumococcal Disease**

- Bacterial disease that results in ear and sinus infections, pneumonia and sometimes meningitis<sup>50</sup>
- Especially dangerous for children and can affect the brain and spinal cord<sup>51</sup>
- Vaccine first used in U.S. in 1977<sup>52</sup>

## **Rotavirus**

- Spread through hand-to-mouth contact<sup>53</sup>
- Symptoms include severe diarrhea and vomiting which can lead to severe dehydration requiring hospitalization<sup>54 55</sup>
- Vaccine was approved by the FDA in 2006 and a second was introduced in 2008.<sup>56</sup>

## **Mumps**

- Contagious disease with most common outbreaks occurring among groups of people who have prolonged, close contact (e.g., sharing eating and drinking utensils, kissing, heavy breathing, sports, close quarters)<sup>57</sup>
- Symptoms include salivary gland swelling, fever and aches and fatigue<sup>58</sup>
- Vaccine licensed in the U.S. in 1967<sup>59</sup>

## **Varicella (Chickenpox)**

- Can be serious or even deadly for infants, adults and those who are immunosuppressed<sup>60</sup>
- Symptoms include itchy rash, blisters, and fever<sup>61</sup>
- Vaccine licensed for use in the U.S. in 1995<sup>62</sup>

## **Diphtheria**

- Can cause difficulty breathing and lead to heart failure, paralysis or even death<sup>63</sup>
- Vaccine was developed in the early 1920s and widely used by the 1930s<sup>64</sup>
- Most commonly spread from person to person through coughing or sneezing<sup>65</sup>

## **Human Papillomavirus (HPV)**

- Spread primarily through skin to skin contact (e.g., sexual contact<sup>66</sup>, cuts, abrasions, or even a small tear in skin)<sup>67</sup>
- Most infections go away on their own, some can cause certain types of cancer in both men and women<sup>68</sup>
- Children can receive the vaccine (administered in two doses) around ages 11-12, or around 15 (administered in three doses)<sup>69</sup>
- Nearly all unvaccinated individuals who are sexually active will get HPV at some point in their lives<sup>70</sup>

## **Tuberculosis**

- Bacteria spread through the air (ie., by coughing, speaking, singing) from one person to another<sup>71</sup>
- Symptoms can include a cough lasting three weeks or longer, chest pain, and coughing up blood<sup>72</sup>
- Can be detected through two tests: a blood test or a skin test<sup>73</sup>

## **Why haven't I heard of some of these diseases?**

### **Because vaccines work!**

Many of these diseases have been wiped out or are exceedingly rare thanks to vaccines!





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