

# DTaP-IPV-Hib

## Diphtheria-Tetanus-Acellular Pertussis-Polio-*Haemophilus influenzae* type b Conjugate Combined Vaccine

Revision Date: June 28, 2024

### Rationale for Update:

- Updated to include Pentacel® product.

Please consult the Product Monograph <sup>(1-3)</sup> for further information about the vaccine.			
	INFANRIX®-IPV/Hib <sup>(1)</sup>	PEDIACEL® <sup>(2)</sup>	PENTACEL® <sup>(3)</sup>
<b>Manufacturer</b>	GlaxoSmithKline Inc.	Sanofi Pasteur Limited	Sanofi Pasteur Limited
<b>Licensed use</b>	Children six weeks up to and including four years of age.	Children two months up to and including six years of age.	Children two months up to and including six years of age.
<b>Off-license use</b>	Children five years up to and including six years of age. Child hematopoietic stem cell transplant (HSCT) recipients five years of age and older. Adult hematopoietic stem cell transplant (HSCT) recipients.	Children starting at six weeks of age. Child hematopoietic stem cell transplant (HSCT) recipients seven years of age and older. Adult hematopoietic stem cell transplant (HSCT) recipients.	Children starting at six weeks of age. Child hematopoietic stem cell transplant (HSCT) recipients seven years of age and older. Adult hematopoietic stem cell transplant (HSCT) recipients.
<b>Indications for use of provincially funded vaccine</b>	<ul style="list-style-type: none"> <li>Primary immunization for children two months up to and including 59 months of age when diphtheria, tetanus, acellular pertussis, polio and Hib vaccines are indicated.</li> <li>Children five years up to and including six years of age who are presenting with no immunization or an incomplete primary series when diphtheria, tetanus, acellular pertussis and polio vaccines are indicated and require the first, second, third or fourth dose in that series.</li> </ul> <p>Note: These children need higher concentrations of diphtheria (designated as “D”) and pertussis (designated as “P”)<sup>(4)</sup> for the first, second, third or fourth dose of diphtheria, tetanus, acellular pertussis and polio.</p> <ul style="list-style-type: none"> <li>Children younger than seven years of age who sustain a wound injury that have not received the recommended number of tetanus toxoid doses for their age and need higher concentrations of diphtheria and pertussis. See <a href="#">Tetanus Post-exposure Prophylaxis in Injury/Wound Management</a>.</li> <li>Child hematopoietic stem cell transplant (HSCT) recipients, see: <a href="#">Child HSCT Recommendations</a>.</li> <li>Children expecting solid organ transplantation. See: <a href="#">Child SOT (before 18 months of age)</a> or <a href="#">Child SOT (after 18 months of age)</a></li> </ul>		

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	<ul style="list-style-type: none"> <li>• Adult hematopoietic stem cell transplant (HSCT) recipients. See <a href="#">Immunization for Adult Hematopoietic Stem Cell Recipients</a>.</li> </ul>
<b>Dose</b>	0.5mL
<b>Route</b>	Intramuscular injection
<b>Schedule</b>	<p><b>For children completing a primary series started with Infanrix hexa®</b></p> <ul style="list-style-type: none"> <li>❖ Dose 4: 18 months of age</li> </ul> <p><b>For children initiating or completing a primary series with DTaP-IPV-Hib:</b></p> <ul style="list-style-type: none"> <li>❖ Dose 1: Day 0</li> <li>❖ Dose 2: 8 weeks after dose 1</li> <li>❖ Dose 3: 8 weeks after dose 2</li> <li>❖ Dose 4: 12 months after dose 3</li> </ul> <p>See <a href="#">Infants: Routine Immunization Schedule</a>. <i>Routine Immunization Schedule for Infants Beginning Immunization at Younger than 12 Months of Age.</i></p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• Minimum spacing between doses three and four is 6 months as long as the child is over 15 months of age.</li> <li>• Children may need fewer doses of the Hib component if they have received a dose of Hib vaccine at 15 months of age or older, however, it is acceptable to give additional doses of the Hib component using this combination vaccine.</li> <li>• When the fourth primary immunizing dose is administered after the fourth birthday, the fifth dose (preschool booster) is not necessary.<sup>(4)</sup></li> <li>• Children receiving their fifth dose between four and six years of age should receive Tdap-IPV. See <a href="#">Tdap-IPV</a> for indications. Note: Children receiving their fifth dose may receive a lower concentration of diphtheria (designated as “d”) and pertussis (designated as “p”).<sup>(4)</sup></li> <li>• Recipients of HSCT (children and adults) should have their immunization schedules restarted post-transplant. See: <ul style="list-style-type: none"> <li>○ <a href="#">Child HSCT</a></li> <li>○ <a href="#">Adult HSCT</a></li> </ul> </li> <li>• Children expecting solid organ transplantation. See: <ul style="list-style-type: none"> <li>○ <a href="#">Child SOT (before 18 months of age)</a></li> <li>○ <a href="#">Child SOT (after 18 months of age)</a></li> </ul> </li> <li>• Children who have had pertussis infection should continue to receive pertussis-containing vaccines.<sup>(4)</sup></li> <li>• Children in whom invasive Hib disease develops before 24 months of age should receive Hib vaccine as recommended because natural disease may not induce protection.<sup>(4)</sup></li> </ul>
<b>Contraindications</b>	<ul style="list-style-type: none"> <li>• Known severe hypersensitivity to any component of the vaccine.</li> <li>• Anaphylactic or other allergic reaction to a previous dose of vaccine containing diphtheria, tetanus, pertussis, polio or Hib antigens.</li> <li>• Encephalopathy (e. g., coma, decreased level of consciousness, prolonged seizures) within seven days of a previous dose of a pertussis-containing vaccine not attributable to another identifiable cause.<sup>(1–3,5)</sup></li> <li>• Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy. Pertussis vaccine should not be administered to persons with such conditions until a treatment regimen has been established and</li> </ul>

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	the condition has stabilized. <sup>(1-3)</sup>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Capsular polysaccharide antigen (Hib antigen) can be detected in the urine of vaccine recipients for up to two weeks following immunization with conjugate vaccines. This phenomenon could be confused with antigenuria associated with invasive Hib infections.<sup>(1-3)</sup></li> <li>• Hib vaccines should not be given to a child younger than six weeks of age.<sup>(6)</sup> Data suggest that Hib conjugate vaccines given before six weeks of age may induce immunologic tolerance (reduced response to subsequent doses).<sup>(6)</sup></li> <li>• Children with neurologic conditions should be assessed carefully. See <a href="#">Immunization Recommendations for Specific Populations (Immunosuppressed and Chronic Health Conditions)</a> <i>Neurologic Conditions</i>.</li> <li>• If Guillain-Barré Syndrome (GBS) occurred within six weeks of immunization with a previous dose of vaccine containing tetanus toxoid, it is prudent to withhold subsequent doses of tetanus-containing vaccine.<sup>(1-4)</sup> Those who develop GBS outside this interval or have an alternative cause identified may receive subsequent doses of tetanus-containing vaccine.<sup>(4)</sup></li> </ul>
<b>Pregnancy</b>	Not intended for use in adults. <sup>(1-4)</sup>
<b>Lactation</b>	Not intended for use in adults. <sup>(1-4)</sup>
<b>Program Notes</b>	<ul style="list-style-type: none"> <li>• 1997-07-01 - Pentacel® introduced into program.</li> <li>• 2007-11-30 - Pediacel® introduced into program.</li> <li>• 2012-11-20 - Infanrix®-IPV/Hib introduced into program.</li> <li>• 2016-09-21 - - Pediacel® revised to include off-license use of infants 6 weeks of age and older.</li> <li>• 2016-09-21 - Both Pediacel® and Infanrix®-IPV/Hib updated to reflect current off-license use of vaccine for HSCT clients, including adults.</li> <li>• 2017-06-01 - Pediacel® and Infanrix®-IPV/Hib implemented for use in place of DTaP-IPV as both Quadracel® and Infanrix®-IPV are currently unavailable.</li> <li>• 2017-11 - Infanrix-hexa® replaces Pediacel® and Infanrix®-IPV/Hib in routine infant schedule for infants born March 1, 2018 or after.</li> <li>• 2022-06-30 – Removal of reference to Td as product no longer available in Alberta.</li> <li>• 2024-06-28 – Updated to include Pentacel® product.</li> </ul>

## References

1. GlaxoSmithKline Inc. INFANRIX-IPV/Hib: Combined diphtheria, tetanus, acellular pertussis vaccine, inactivated poliomyelitis and Haemophilus Influenzae type b vaccine. Product Monograph. 2018. p. 1–29.
2. Sanofi Pasteur Limited. PEDIACEL® Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Adsorbed Combined with Inactivated Poliomyelitis Vaccine and Haemophilus b Conjugate Vaccine. Product Monograph. 2023.
3. Sanofi Pasteur Limited. PENTACEL ® Act-HIB ® Reconstituted with QUADRACEL ® Haemophilus b Conjugate Vaccine (Tetanus Protein - Conjugate) Reconstituted with Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Adsorbed Combined with Inactivated Poliomyelitis Vaccine. Product Monograph. 2023. p. 1–35.
4. National Advisory Committee on Immunization. Canadian Immunization Guide (Evergreen ed.) [Internet]. Ottawa, ON: Public Health Agency of Canada. Available from: [www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php](http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php).
5. Centers for Disease Control and Prevention. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP) [Internet]. Morbidity and Mortality Weekly Report, 60(2). 2011 [cited 2017 Feb 23]. Available from: [www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm).
6. Centers for Disease Control and Prevention. Haemophilus influenza type b [Internet]. Epidemiology and Prevention of Vaccine-Preventable Diseases 13th ed. (chap. 8). 2015 [cited 2017 Feb 23]. Available from: [www.cdc.gov/vaccines/pubs/pinkbook/hib.html](http://www.cdc.gov/vaccines/pubs/pinkbook/hib.html).