

Three new pneumococcal vaccines have recently been approved in Canada: Vaxneuvance[®], Prevnar 20[™] and Capvaxive[®].¹⁻³ The National Advisory Committee on Immunization (NACI) has published public health level recommendations on the use of Vaxneuvance[®] and Prevnar 20[™].^{3,4} The Saskatchewan Ministry of Health's publicly funded pneumococcal vaccine program offers Vaxneuvance[®] (children 6 weeks up to 5 years of age) and Prevnar 20[™] (6 weeks of age and older meeting criteria) but does not implement all of NACI's recommendations.^{5,6} This document is meant to help Saskatchewan practitioners understand pneumococcal vaccines, determine adults who are eligible for publicly funded Prevnar 20[™], and identify those who are not eligible for publicly funded but may benefit.



Two types of pneumococcal vaccines are available in Canada: conjugated and polysaccharide.

- **Conjugated** vaccines contain antigens that are conjugated to a protein carrier. These vaccines can induce a **long-term protective response** by activating T cell recognition and the formation of memory B cells. This allows the body to respond quicker and more efficiently when it reencounters these bacteria (boost response).⁷ The manufacturer has recently discontinued Prevnar 13. Vaxneuvance[®], Prevnar 20[™], and Capvaxive[®] are the available conjugate pneumococcal vaccines.
- **Polysaccharide** vaccines do not activate a memory B cell response meaning they cannot be boosted. Compared to conjugated vaccines, their **duration of effect is generally shorter and some populations do not respond as well** (infants, older adults, and some immunocompromised adults).⁷ The only polysaccharide vaccine available is Pneumovax[®] 23 and due to the recent marketing of Prevnar 20[™], its use is recommended only when Prevnar 20[™] is unavailable or inaccessible and then only in combination with Vaxneuvance[®].

TABLE 1: Pneumococcal Vaccines Available in Canada^{3,4}

For a detailed comparison of the available pneumococcal vaccines, including composition and dosing, see Table 2 in NACI's [Public health level recommendations on the use of pneumococcal vaccine in adults](#). This does not currently include Capvaxive[®]; for information see [product monograph](#).

Vaccine	Brand Name	Abbreviation	Serotypes included
Pneumococcal 13-valent Conjugate Vaccine [†]	Prevnar 13 [†]	PNEU-C-13	1,3,4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F
Pneumococcal 15-valent Conjugate Vaccine	Vaxneuvance [®]	PNEU-C-15	Same as Pneu-C-13 plus 22F, 33F
Pneumococcal 20-valent Conjugate Vaccine	Prevnar 20 [™]	PNEU-C-20	Same as Pneu-C-15 plus 8, 10A, 11A, 12F, 15B
Pneumococcal 21-valent Conjugate Vaccine	Capvaxive [®]	PNEU-C-21	3, 6A, 6C, 7F, 8, 9N, 10A, 11A, 12F, 15A, 15B, 15C, 16F, 17F, 19A, 20A, 22F, 23A, 23B, 24F, 31, 33F, 35B
Pneumococcal 23-valent Polysaccharide Vaccine	Pneumovax [®] 23	PNEU-P-23	Same as Pneu-C-20 except 6A, plus 2, 9N, 17F, 20

[†] Pneumococcal 13-valent Conjugate Vaccine (Prevnar 13) has been discontinued by the manufacturer and pharmacies can no longer order.

Serotypes Involved in Invasive Pneumococcal Disease in Canada

From 2016 to 2020, serotypes 3 and 22F were identified as the most common causes of invasive pneumococcal disease (IPD). When looking at the serotypes included in the vaccines compared to the circulating serotypes in 2020 among adults 65 years old or older, coverage increased incrementally as vaccine valency increased. PNEU-C-13 covered just over 25%, PNEU-C-15 about 40%, PNEU-C-20 about 55% and PNEU-P-23 about 67% of the circulating serotypes.³ While PNEU-P-23 covered the most serotypes, unfortunately, immunity from polysaccharide vaccines is lower compared to conjugate vaccines and wanes after about 5 years.^{4,7} As PNEU-C-20 is a conjugate vaccine containing the majority of serotypes, the necessity for both PNEU-C-13 and PNEU-P-23 use in adults should not be required unless PNEU-C-20 is unavailable or inaccessible.

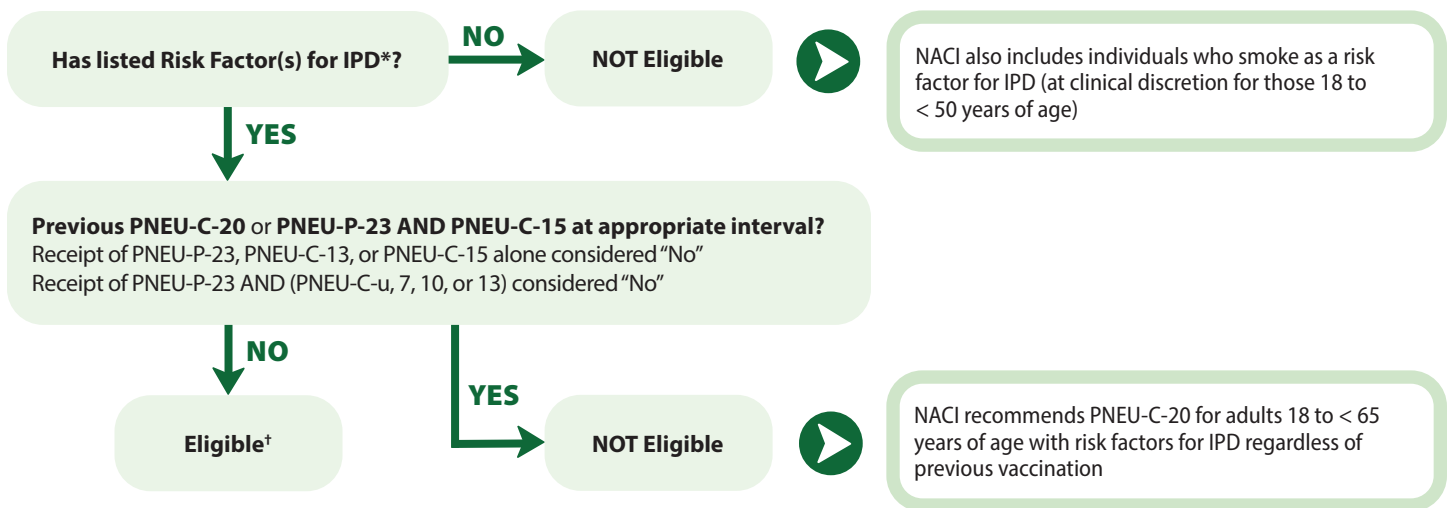
Pneumococcal Vaccine Recommendations for Adults

NACI pneumococcal vaccine recommendations differ somewhat from eligibility criteria for publicly funded pneumococcal vaccine (PNEU-C-20) in Saskatchewan. Pharmacists may be asked about vaccination of those not eligible for publicly funded options. Individuals who are not eligible for publicly funded PNEU-C-20 in Saskatchewan may still benefit from the vaccine.

See Algorithms 1 and 2 for eligibility of publicly funded PNEU-C-20 in adults 18 to < 65 years of age, and those 65 years of age and older, respectively, in Saskatchewan. The algorithms refer to risk factors for IPD; the risk factors are found in the Saskatchewan Immunization Manual, **Chapter 10: Biological Products** under *Pneumococcal Conjugate Vaccine* → *Age-based Risk Factor Eligibility for Pneu-C-20 Immunization*. Note that the lists of risk factors differ for those under 65 years and those 65 years and older. The algorithms indicate populations not eligible for publicly funded PNEU-C-20 who NACI includes in their recommendations.

ALGORITHM 1^{3,4,6}:

Eligibility for Publicly Funded PNEU-C-20 in Individuals 18 to < 65 Years of Age in Saskatchewan



* Asplenia; cardiac disease; cerebrospinal fluid disorder; cochlear implant; cystic fibrosis; diabetes mellitus; liver disease (including hepatitis B and C); lung disease; malignancy/cancer; neurological conditions that impede the clearance of respiratory/oral secretions; renal disease; sickle cell disease; immunocompromised; homelessness; resident of long term care, personal care home, or group home; substance use including non-injection illicit and injection drug use
See **SIM Chapter 7 Appendix 7.1** for full risk factor details and qualifying conditions.

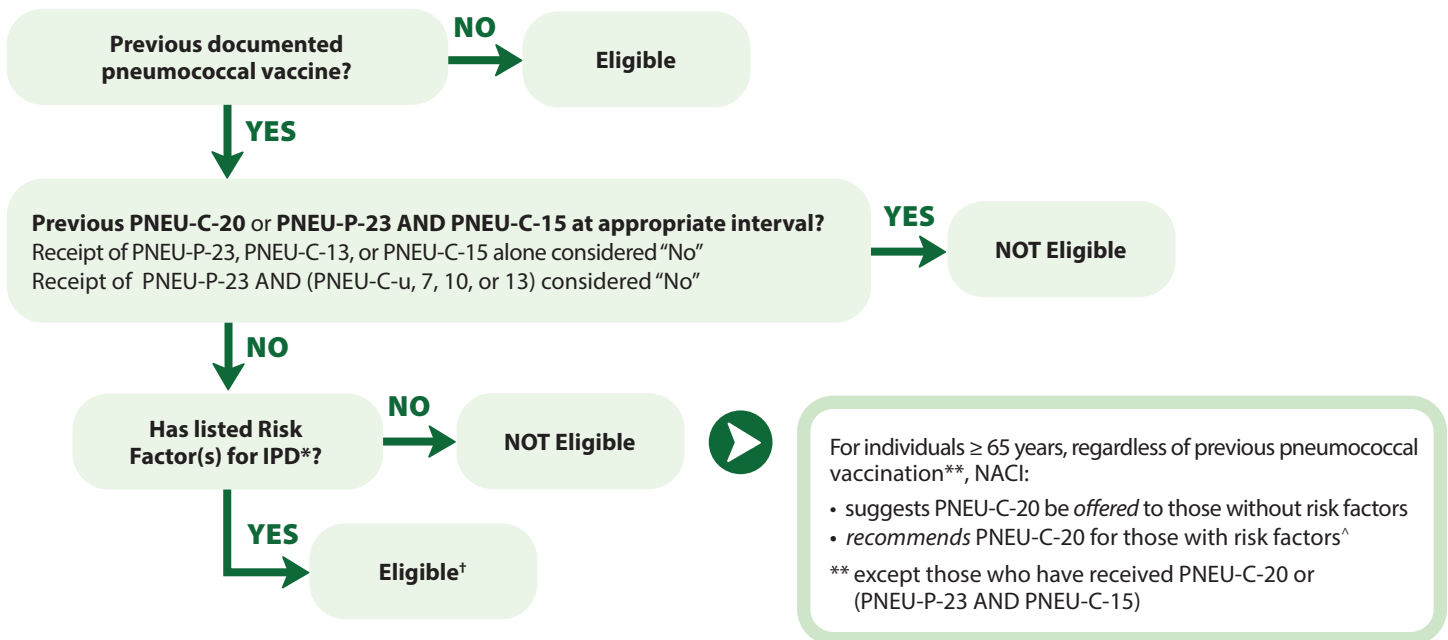
† Recommended intervals following previous vaccination:

- ≥ 1 year (min 8 weeks) after **PNEU-C-13 or PNEU-C-15**
- ≥ 5 years (min 1 year) after **PNEU-P-23**
- ≥ 5 years after last documented pneumococcal vaccine if received **PNEU-P-23 AND (PNEU-C-u, 7, 10, or 13)**

See Saskatchewan Immunization Manual, **Chapter 10: Biological Product** → Pneumococcal Conjugate Vaccine → *Pneu-C-20 Immunization Flow Charts* for more information

ALGORITHM 2^{3,4,6}:

Eligibility for Publicly Funded PNEU-C-20 in Individuals ≥ 65 Years of Age in Saskatchewan



* Asplenia; malignancy/cancer; renal disease; sickle cell disease; immunocompromised; resident of long term care, personal care home, or group home.
See **SIM Chapter 7 Appendix 7.1 for full risk factor details and qualifying conditions.**

† Recommended intervals following previous vaccination:

- ≥ 1 year (min 8 weeks) after **PNEU-C-13 or PNEU-C-15**
- ≥ 5 years (min 1 year) after **PNEU-P-23**
- ≥ 5 years after last documented pneumococcal vaccine if received **PNEU-P-23 AND (PNEU-C-u,7, 10, or 13)**

[^] NACI’s risk factor list includes everything in Saskatchewan’s as well as: cerebrospinal fluid disorder, cochlear implants, liver disease, lung disease, neurological conditions that impair clearance of oral secretions, heart disease, diabetes mellitus, alcohol use disorder, substance use disorder, and smoking.

See Saskatchewan Immunization Manual, **Chapter 10: Biological Product** → Pneumococcal Conjugate Vaccine → *Pneu-C-20 Immunization Flow Charts* for more information

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