

Vaccination guidelines for pediatric patients undergoing splenectomy at the Hospital for Sick Children, Toronto

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Immune thrombocytopenia remains the most common indication for splenectomy in some areas in Canada. Splenectomized patients are at increased risk for severe infections, primarily from encapsulated organisms such as *Streptococcus pneumoniae*, *Neisseria meningitidis*, and *Haemophilus influenzae*. Available guidelines (Canadian, CDC, Brazilian, UK) recommend the administration of polyvalent pneumococcal, meningococcal C conjugate, and H influenza type b (Hib) vaccines at least 2-4 weeks before or 2 weeks after splenectomy.

The following is the current vaccination protocol followed at The Hospital for Sick Children for children undergoing splenectomy:

1. Hib vaccination: 1 intramuscular dose to children ≥ 5 y.o., regardless of Hib immunization history, and at least 1 year after any previous dose.
2. Pneumococcal vaccination:
 - a) 13-Valent Pneumococcal Conjugate Vaccine: 1 or 2 intramuscular doses, at least 8 weeks apart/after the most recent dose, depending on the patient's age and previous doses of pneumococcal vaccines.
 - b) 23-Valent Pneumococcal Polysaccharide Vaccine: 1 intramuscular /subcutaneous dose when child turns 2 y.o., at least 8 weeks after the last 13-Valent Pneumococcal Conjugate Vaccine dose.
3. Meningococcal vaccination:
 - a) Quadrivalent Conjugate Meningococcal Vaccine (MEN-C-ACYW135): 2-4 intramuscular doses ≥ 8 weeks apart, depending on the age of the patient. A booster dose is recommended every 5 years thereafter.
 - b) Multicomponent Meningococcal B Vaccine: 2-4 intramuscular doses ≥ 2 months apart, depending on the age of the patient.
4. Annual influenza vaccination: One intramuscular/intranasal dose, depending on the patient's age (children 6 months to <9 y.o. who have never received the seasonal influenza vaccine require 2 doses).

Canadian guidelines suggest that, in case of vaccination of patients with bleeding disorders, intramuscular administration may generally be safe when given with a small gauge needle (≤ 23 gauge) and firm pressure for 5-10 minutes. Subcutaneous immunization for vaccines intended for intramuscular administration can be associated with local reactogenicity and diminished immune response.