

Immunization & Serology

Information for Health Care Professionals

According to the Canadian Immunization Guide: "Evidence of long-term protection against Hepatitis B has only been demonstrated in individuals who have been vaccinated according to a recommended immunization schedule. Independent of their anti-HBs titres, children and adults lacking adequate documentation of immunization should be considered susceptible and started on an immunization schedule appropriate for their age and risk factors."

Serology terms:

Test for immunity due to immunization: Anti-HBs = Hepatitis B surface antibody = HBsAb

Tests for immunity due to naturally acquired infection: Anti-HBs AND Anti-HBc = Hepatitis B core antibody

Test for chronic infection: HBsAg = Hepatitis B surface antigen

Faculty of Health Sciences requirement for learners in health professional programs:

A DOCUMENTED Hepatitis B vaccination series is mandatory (unless the learner is immune due to naturally acquired infection or has chronic Hepatitis B infection), PLUS anti-HBs serology is required one or more months after completion of a documented series. Positive anti-HBs serology alone with missing or incomplete vaccination records is not considered proof of immunity by the Canadian Immunization Guide and needs to be repeated after a documented series is completed.

Learners in the Midwifery, Physician Assistant and Undergraduate Medicine programs also require a test for Hepatitis B infection (HBsAg) even if anti-HBs serology is positive. The test must be dated one or more months after a documented Hepatitis B primary vaccination series; if the series is still in process, the test must be dated after March 1st the year of program entry and repeated after the series is completed (do not test within 28 days after a Hepatitis B vaccine to avoid the possibility of a false positive result).

Hepatitis B immunization schedules: See table on next page for recommended dosages and schedules.

A 2-dose series is allowed only if both the type and dose of vaccine are documented AND both doses were given within the age range in the recommended schedule, otherwise a 3-dose series will be required.

If vaccination records are missing or incomplete, a documented series must be completed according to the learner's current age (e.g. if the learner received the 1st dose between age 11 and 15 years but missed the 2nd dose, give two more doses spaced 5 months apart to complete a 3-dose series). All previous documented doses count towards the total series as long as minimum spacing requirements are met; there is no maximum. We recommend a 3-dose series (months 0, 1, 6) instead of the rapid schedule 4-dose series.

It is best to use Twinrix to complete a series that was started with Twinrix. Either a monovalent vaccine or Twinrix may be used to complete a series that was started with a monovalent vaccine using the recommended schedule; if Twinrix is used, anti-HBs serology (+/- HBsAg serology) needs to be tested one month after the Hepatitis B vaccine requirement is completed (a full Twinrix series can then be completed to provide protection against Hepatitis A but is not required for the program).

Not immune after ONE documented vaccination series (anti-HBs < 10 IU/L):

If the series was completed more than six months ago, give ONE booster plus repeat anti-HBs serology one month later. If not immune after the first booster, give TWO additional boosters spaced five months apart plus repeat anti-HBs serology one month after the third booster.

If the series was completed between one and six months ago, give a second series (three doses given at 0, 1, 6 months) plus repeat anti-HBs serology one month after completion of the second series.

Not immune after TWO documented vaccination series:

The learner is considered a vaccine non-responder and is unlikely to benefit from further immunizations. Repeat serology is not required. It is possible that a person who does not respond to the vaccine may already be infected with Hepatitis B, therefore testing for HBsAg (Hepatitis B surface antigen) is recommended if not already done.

For more information:

[Canadian Immunization Guide Hepatitis B vaccines](#)

Contact the Health Screening Office: hrsadmin@mcmaster.ca, tel 905-525-9140 ext 22249, fax 905-528-4348

Recommended Dosages and Schedules for Hepatitis B-Containing Vaccines

Adapted from the Canadian Immunization Guide, Part 4: Active Vaccines – Hepatitis B Vaccine, Table 3 (available online):

AGE	Monovalent Hepatitis B (1st dose = month 0)				DTaP-HB-IPV-Hib	HAHB (1st dose = month 0)	
	RECOMBIVAX HB® (5 µg)	RECOMBIVAX HB® (10 µg)	ENGERIX®-B (10 µg)	ENGERIX®-B (20 µg)	INFANRIX hexa™ (10 µg HB)	TWINRIX® Junior (10 µg HB)	TWINRIX® (20 µg HB)
Infants less than 6 months of age	0, 1, 6		0, 1, 6 or 0, 1, 2, 12		Months of age: 2, 4, 6, 12-23 or 2, 4, 6 or 2, 4, 12-23	Not indicated	Not indicated
6 months to less than 24 months of age	0, 1, 6		0, 1, 6 or 0, 1, 2, 12		Months: (1st dose = month 0) 0, 2, 4, 10-21 or 0, 2, 4 or 0, 2, 10-21	0, 1, 6	0, 6-12
24 months to less than 11 years of age	0, 1, 6		0, 1, 6 or 0, 1, 2, 12		May be given to children aged 24 months to 7 years, if necessary	0, 1, 6	0, 6-12
11 to less than 16 years of age	0, 1, 6	0, 4-6	0, 1, 6 or 0, 1, 2, 12	0, 6	Not indicated	0, 1, 6	0, 6-12
16 to less than 19 years of age	0, 1, 6		0, 1, 6 or 0, 1, 2, 12		Not indicated	0, 1, 6	Not indicated
19 years of age	0, 1, 6		0, 1, 6 or 0, 1, 2, 12		Not indicated	Not indicated	0, 1, 6 or 0, day 7, day 21, month 12
20 years of age and older		0, 1, 6		0, 1, 6 or 0, 1, 2, 12 or 0, day 7, day 21, month 12	Not indicated	Not indicated	0, 1, 6 or 0, day 7, day 21, month 12