

RECOMMENDED VACCINATION SCHEDULE FOR ADULTS[§]

	Month 0	Month 1	Month 6
Hepatitis A vaccine*#	●		●
Hepatitis B vaccine†‡	●	●	●
Hepatitis A and B combination vaccine±α	●	●	●

§ If the series is delayed between doses, it is NOT necessary to restart the series. Continue from the last dose given.

* Vaccination begun with hepatitis A vaccine from one manufacturer may be completed with hepatitis A vaccine from another manufacturer.^{2,3}

Havrix®1440 EL.U./1.0 mL or Vaqta® 50 U/1.0 mL given intramuscularly in the deltoid muscle.

† Engerix-B® 20 mcg/1.0 mL or Recombivax HB® 10 mcg/1.0 mL given intramuscularly in the deltoid muscle. Engerix-B® can be used to complete a vaccination course initiated with Recombivax HB®.

‡ For hemodialysis patients:

Engerix-B®: two 20 mcg/1.0 mL injections given at 0, 1, 2 and 6 months or Recombivax HB® 40 mcg/mL given at 0, 1, and 6 months, intramuscularly in the deltoid muscle.

± Twinrix® (combination of Havrix® 720 EL.U. and Engerix-B® 20 mcg vaccine in 1 mL) given intramuscularly in the deltoid muscle.

α In select patients, consider accelerated dosing of Hepatitis A and B combination vaccine (Day 0, Day 7, Day 21-30, Booster at 12 months).

NONRESPONDERS^{8,9}

In immunocompromised patients and in hemodialysis patients, serologic testing may be necessary to determine antibody response. Additional booster doses of hepatitis A and/or hepatitis B vaccine or restarting the vaccination series may be needed.

REFERENCES

- Centers for Disease Control and Prevention. Prevention of Hepatitis A Through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(RR07):1-23.
- Havrix® (Hepatitis A Vaccine) package insert. Research Triangle Park, NC; GlaxoSmithKline; 2008.
- Vaqta® (Hepatitis A Vaccine, Inactivated) package insert. Whitehouse Station, NJ; Merck & Co., Inc; 2007.
- Centers for Disease Control and Prevention. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults. MMWR 2006; 55(RR16):1-25.
- Engerix-B® [Hepatitis B Vaccine, (Recombinant)] package insert. Research Triangle Park, NC; GlaxoSmithKline; 2006.
- Recombivax HB® (Hepatitis B Vaccine, Recombinant) package insert. Whitehouse Station, NJ; Merck & Co., Inc; 2007.
- Twinrix® [Hepatitis A Inactivated and Hepatitis B (Recombinant) Vaccine] package insert. Research Triangle Park, NC; GlaxoSmithKline; 2007.
- Recommendations of the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and the HIV Medicine Association of the Infectious Diseases Society of America (HIVMA/IDSA). Guidelines for Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents. June 18, 2008; 1-286.
- Centers for Disease Control and Prevention. Recommendations for Preventing Transmission of Infections Among Chronic Hemodialysis Patients. MMWR 2001;50(RR05): 20-36.
- Centers for Disease Control and Prevention. FDA Approval of an Alternate Dosing Schedule for a Combined Hepatitis A and B Vaccine (Twinrix®). MMWR 2007;56(40):1057.



Department of
Veterans Affairs



Employee Education System

VACCINATION AGAINST HEPATITIS A & B

A Summary of Current Recommendations

Revised September 2008

*Office of Clinical Public Health Programs
Public Health Strategic Health Care Group*

For further information, consult the VA hepatitis C website at www.hepatitis.va.gov and the NIH Consensus Statement at consensus.nih.gov



MODES OF VIRAL TRANSMISSION

- Hepatitis A Virus (HAV): by the fecal-oral route, through close person-to-person contact, or ingestion of contaminated food and water.
- Hepatitis B Virus (HBV): through blood or other body fluids.

VACCINES FOR HEPATITIS A AND B

Hepatitis A: Two inactivated vaccines available

Hepatitis B: Two recombinant vaccines available

Hepatitis A and B: One combination vaccine

- Administer the combination vaccine to patients who lack immunity to both infections and who belong to risk groups for both infections (see table on **Who To Vaccinate**).
- Administer either hepatitis A or B vaccine to patients who lack immunity to, and are at risk for, one virus but not the other (see table on **Who To Vaccinate**).

WHO TO VACCINATE FOR HEPATITIS A AND/OR HEPATITIS B ¹⁻¹⁰

- Patients without prior immunity to hepatitis A or B (i.e. anti-HAV or anti-HBs and anti-HBc negative) who fall into one or more of the following groups as listed in table on **Who To Vaccinate**.
AND
- Patients without an allergy to any component of the hepatitis A or B vaccine or to yeast with the hepatitis B vaccine.

WHO TO VACCINATE	Hepatitis A Vaccine	Hepatitis B Vaccine
Persons with chronic liver disease		
• Alcoholic cirrhosis	•	•
• Chronic hepatitis B	•	
• Chronic hepatitis C	•	•
• Autoimmune hepatitis	•	•
• Primary biliary cirrhosis	•	•
• Patients undergoing liver transplantation	•	•
Persons with HIV infection	•	•
Injection drug users	•	•
Persons engaged in high risk sexual activity		
• Men who have sex with men	•	•
• Persons with >1 sexual partner in a six-month period	•	•
Persons and military personnel traveling to endemic areas	•	•
Persons at occupational and/or transmission risk		
• Food handlers and kitchen workers	•	
• Certain institutional workers	•	
• Employees of day-care centers	•	
• Laboratory workers handling live hepatitis A	•	
• Police officers		•
• Personnel providing first-aid or medical assistance		•
• Healthcare personnel		•
Subpopulations at increased risk of exposure		
• Residence of communities experiencing an outbreak of hepatitis A	•	
• Sexual partners known to be HBsAg positive		•
• Infants born to HBV-infected mothers		•
• Persons living with someone who has hepatitis B		•
• Patients on hemodialysis		•
• Recipients of frequent blood transfusions or clotting factors	•	•
• Prisoners		•
• Alaskan natives	•	•
• Pacific Islanders		•

WHY VACCINATE HEPATITIS C PATIENTS AGAINST HEPATITIS A AND B?

- Patients coinfectd with hepatitis C virus (HCV) and HAV or HBV are at increased risk for severe liver disease.
- Patients with HCV may be at increased risk for acquiring HBV.
- Vaccination against hepatitis A and B is beneficial in all patients with chronic liver disease. However, responses are better in patients with early compared to advanced disease.

VACCINATION APPROACH BASED ON SEROLOGY

Anti-HAV*	—	—	+	+
Anti-HBs**	—	+	—	+
	HAV & HBV Combination Vaccine (Twinrix®) or Individual Vaccines	HAV Vaccine (Havrix® or Vaqta®)	HBV Vaccine (Engerix-B® or Recombivax HB®)	No vaccine

* Anti-HAV: antibodies to hepatitis A antigen, either IgG or total (IgG plus IgM).

** Anti-HBs: antibody to hepatitis B surface antigen

Note: A positive anti-HBc (antibody to hepatitis B core antigen) in the absence of anti-HBs may not indicate immunity, and recommendations for vaccinations in this situation are not available.