

# Understanding the Updated Hepatitis B Vaccination Recommendations and Guidance

## Introduction

The Centers for Disease Control and Prevention (CDC) currently recommends universal hepatitis B (HepB) vaccination for any individual from infancy through 59 years.<sup>1</sup> The new recommendation follows the Advisory Committee on Immunization Practices (ACIP) guidance, as they expanded their recommendations for HepB vaccination in April 2022 to include universal HepB vaccination for all adults 19–59 years.

The new recommendation adds to the existing one for universal infant HepB vaccination and for anyone <19 years who is unvaccinated for HepB.<sup>1</sup> HepB vaccination remains recommended for adults ≥60 years with risk factors for HepB (see the Risk Factors box). For adults ≥60 years without known risk factors for HepB, vaccination is acceptable if the patient desires it.

The recent expansion of the HepB vaccine recommendations is an important public health intervention since “Hepatitis B vaccination is the most effective measure to prevent HBV [hepatitis B virus] infection and its consequences.”<sup>2</sup> These effects can include chronic liver disease, liver cancer, and even death.<sup>3</sup>

There are currently an estimated 2.4 million individuals in the United States living with HepB and an estimated 20,000 new infections every year.<sup>4</sup> Offering universal HepB vaccination for adults 19–59 years is significant, as less than

## Key Points<sup>1</sup>

- Universal hepatitis B or HepB vaccination is now recommended from birth through 59 years.
- HepB vaccine remains recommended for individuals ≥60 years with risk factors for HepB.
- HepB vaccine is also appropriate for individuals ≥60 years without risk factors for HepB.
- There are currently five U.S. Food and Drug Administration (FDA)-approved HepB vaccines for adults ≥18 years.

one-third of the U.S. adult population is currently vaccinated against HepB,<sup>1</sup> and individuals 30–59 years are the highest-risk age range for new HepB infections.<sup>5</sup>

There is an underestimation of adult patients who would benefit from immunizations for several reasons, including their vaccination status not being validated by medical records, demographic and other characteristics (e.g., insurance status, access to health care, patient unwillingness to disclose behaviors increasing the risk for HepB), and adults not accurately recalling or having records of receiving vaccines as children.<sup>6</sup> Therefore, it is imperative to universally target patients in the age range with the greatest risk of contracting HepB. The CDC’s updated HepB vaccination guidelines seek to do just that, thereby reducing new cases of HepB and subsequent morbidity and mortality from chronic HepB.

## Risk Factors

Adults  $\geq 60$  years with risk factors for HepB:

- Persons at risk for infection by sexual exposure:
  - Sex partners of persons testing positive for HBsAg
  - Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than one sex partner during the previous six months)
  - Persons seeking evaluation or treatment for a sexually transmitted infection
  - Men who have sex with men
- Persons at risk for infection by percutaneous or mucosal exposure to blood:
  - Persons with current or recent injection drug use
  - Household contacts of persons testing positive for HBsAg
  - Residents and staff members of facilities for persons with developmental disabilities
  - Health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
  - Persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis
  - Persons with diabetes at the discretion of the treating clinician
- Others:
  - International travelers to countries with high or intermediate levels of endemic HepB virus infection (HBsAg prevalence of  $\geq 2\%$ )
  - Persons with hepatitis C virus infection
  - Persons with chronic liver disease (including, but not limited to, persons with cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an alanine aminotransferase or aspartate aminotransferase level greater than twice the upper limit of normal)
  - Persons with HIV infection
  - Persons who are incarcerated

Abbreviation: HBsAg = hepatitis B surface antigen

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## FDA-approved HepB Vaccines

There are currently four HepB vaccines (Recombivax HB, Engerix-B, Heplisav-B, and PreHevbrio) and one combination HepA and HepB vaccine (Twinrix) approved by the FDA (see Table 1. HepB Recommended Doses and Schedule).<sup>1</sup> The safety and efficacy of these vaccines are well established. They provide long-term protection for decades following administration for most patients without needing a booster.<sup>7</sup>

Four of the approved HepB vaccines (Recombivax HB, Engerix-B, PreHevbrio, and Twinrix) are administered as a 3-dose vaccine series over six months (doses at 0, 1 month after the 1st dose, and 6 months after the 1st dose).<sup>1</sup>

Other important details that distinguish the vaccines include<sup>1</sup>:

- Two vaccines (Engerix-B and Recombivax HB) are approved for use in pediatric and adult patients.
- PreHevbrio is a trivalent vaccine.
- Twinrix offers protection against both HepA and HepB.
- Heplisav-B is the only HepB vaccine offered as a 2-dose series that can be completed in 1 month compared to the 6 months for the other vaccine series.

The ACIP does not provide preferential recommendations for using any of these vaccines except for women who are pregnant or breastfeeding and patients on dialysis. These patients should receive Engerix-B, Recombivax HB, or Twinrix.<sup>1</sup>

**Table 1. HepB Recommended Doses and Schedule**

HepB Vaccine, Number of Doses in Series and Age Patients Can Start Series	Dose Schedule
Recombivax HB (3-dose series) at $\geq 1$ year	0, 1, and 6 months
Engerix-B (3-dose series) at $\geq 1$ year	0, 1, and 6 months
Heplisav-B (2-dose series) at $\geq 18$ years	0 and 1 month
Twinrix (3-dose series) – HepA-HepB combination vaccine at $\geq 18$ years	0, 1, and 6 months
PreHevbrio (3-dose series) at $\geq 18$ years	0, 1, and 6 months

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## Clinical Guidance

To implement into practice the updated CDC recommendations for universal HepB vaccination for patients 19–59 years, physicians and other health care providers should adhere to the following best practices:

- *Use EHR alerts* to help identify individuals without documented completion of the HepB vaccine series. This real-time prompt may encourage care team members to offer the HepB vaccine to unvaccinated patients during the clinical encounter.
- *Incorporate a HepB vaccine health maintenance alert in the patient care portal* to alert unvaccinated patients 19–59 years of their need to receive the HepB vaccine. This may encourage patients to inquire about receiving a HepB vaccine at future appointments.
- *Implement standing orders for HepB vaccination* to empower team members to vaccinate unvaccinated patients.
- *Schedule the next vaccine in a series* when administering the previous dose, as this may help ensure the patient returns to complete subsequent vaccines in a multi-dose series.

Family physicians who provide obstetrical care should continue to routinely ensure their patients who are pregnant have been vaccinated for HepB, given that the perinatal period is one of the highest risks of HepB transmission to infants.

Given the increased risk of contracting HepB among individuals engaging in intravenous drug use and those with multiple sexual partners, physicians and other health providers may consider HepB vaccine outreach to these specific patient populations. Offering HepB vaccines as part of the services provided at addiction medicine clinics, needle exchange programs, or when practicing street medicine or giving care to sex workers would provide a high-yield intervention for these higher-risk patient populations.

## Questions to Ask When Vaccinating Adults

### *What if a patient is uncertain of their prior HepB vaccine status?*

If no written records exist showing prior vaccination, the CDC recommends providing the patient with the HepB vaccine.<sup>3</sup> There is no known risk of harm to the individual if they previously received HepB vaccination.

### *What if a patient is uncertain of their HepB infection status?*

Testing to assess for prior exposure to HepB is not required before initiating HepB vaccination in adults. Though individuals previously infected with HepB will not benefit from vaccination, there is no known harm in receiving HepB vaccination following HepB infection.<sup>7</sup> In areas with an increased prevalence of HepB, physicians and other health care providers may wish to check HepB serology prior to, or at the time of, administering the first vaccine as the series would not be completed if the individual was previously infected with HepB due to lack of efficacy.<sup>8</sup>

### *Do the new recommendations suggest that individuals who completed the HepB vaccine series as a child now require a HepB booster?*

All of the current HepB vaccines provide long-term or lifelong immunity. Therefore, there is no need for a booster series for individuals who previously completed a HepB vaccine series.<sup>9</sup> One population that may require a HepB booster are patients on hemodialysis.<sup>4</sup> These patients have antibodies to hepatitis B surface antigen (anti-HBs) checked annually. If their anti-HBs are <10 mIU/mL, then a booster dose should be administered.<sup>7</sup>

### *What if an individual starts with one formulation of the HepB vaccine, do they need that same formulation to complete the series?*

Completion of the vaccine series with the same vaccine formulation is preferred. However, if the previous vaccine formulation is unknown or the same vaccine formulation is unavailable, the series can be completed with another HepB vaccine formulation as a 3-dose series.<sup>8</sup> When completing the series with a different formulation of the HepB vaccine, it is

recommended to administer the 2nd dose at least 4 weeks after the 1st dose. The 3rd dose should be given a minimum of 8 weeks after the 2nd dose and a minimum of 16 weeks after the 1st dose.

***What if the HepB vaccine series is interrupted or significantly delayed, does the patient need to restart their vaccination series?***

There is no need to restart the HepB vaccine series.<sup>10</sup> The care team should ensure that the 2nd dose is at least 4 weeks after the 1st dose. If completing a three-dose series, the 3rd dose should be administered a minimum of 8 weeks after the 2nd dose and a minimum of 16 weeks after the 1st dose.

***Should women who are pregnant or breastfeeding receive HepB vaccines?***

It is recommended that women who are unvaccinated and pregnant or breastfeeding should receive Engerix-B, Recombivax HB, or Twinrix.<sup>1</sup> Due to limited data on the impact on lactation and pregnancy safety for Heplisav-B and PreHevbrio, these vaccines are not currently recommended for those patient populations.

***Are there any contraindications to giving HepB vaccines?***

HepB vaccines are contraindicated in individuals with a serious allergic reaction to a previous dose of the HepB vaccine, a component of the HepB vaccine, or yeast with the exception of PreHevbrio which does not contain yeast, making it is safe for yeast-allergic recipients.<sup>11</sup>

## Resources

- AAFP – Immunization Schedules (2023 Immunization Schedules by Age Group)  
<https://www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines/immunization-schedules.html>
- CDC – Hepatitis B Vaccination  
<https://www.cdc.gov/vaccines/vpd/hepb/index.html>
- CDC – Hepatitis B Vaccination of Adults  
<https://www.cdc.gov/hepatitis/hbv/vaccadults.htm>
- CDC – Hepatitis B Vaccination: Information for Healthcare Providers  
<https://www.cdc.gov/vaccines/vpd/hepb/hcp/index.html>
- CDC – Hepatitis B Information: Frequently Asked Questions for Health Professionals  
<https://www.cdc.gov/hepatitis/hbv/hbvfaq.htm>

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