

Implementing Hepatitis B Universal Adult Screening and Vaccination: Clinical Answers for Healthcare Professionals

Use this clinical resource to address common questions of healthcare team members who implement adult hepatitis B screening and vaccination guidelines.

Which adults should be vaccinated for hepatitis B?

In April 2022, CDC published updated recommendations from the Advisory Committee on Immunization Practices (ACIP) for the use of hepatitis B vaccine (HepB) in adults. In addition to routine universal childhood HepB vaccination, CDC now recommends catch-up vaccination of all adults younger than age 60 years not previously vaccinated. CDC also recommends that healthcare providers offer HepB vaccination to all adults age 60 or older and routinely given to any adult in this age group known to be at risk. Access the ACIP recommendation: www.cdc.gov/mmwr/volumes/71/wr/pdfs/mm7113a1-H.pdf.

Which adults should be screened for hepatitis B?

In March 2023, CDC published updated hepatitis B screening and testing guidelines for all adults age 18 years or older. In brief, it is recommended that all adults should be serologically screened for hepatitis B at least one time using a triple panel test, regardless of vaccination history. The triple panel includes antibody to hepatitis B surface antigen (anti-HBs), total core antibody (anti-HBc), and surface antigen (HBsAg). Pregnant people should be tested for HBsAg during each pregnancy, regardless of testing or vaccination history. After the one-time screening, unvaccinated, susceptible individuals at ongoing risk should be tested periodically for infection. In addition, anyone who requests testing should be tested. Access the CDC recommendation: www.cdc.gov/mmwr/volumes/72/rr/pdfs/rr7201a1-H.pdf.

Why should healthcare professionals focus on vaccinating all adults against hepatitis B now?

Anyone can be infected with hepatitis B. Everyone can benefit from knowing their status and being protected. The majority of adults reported to CDC in recent years with acute hepatitis B have no reported risk factor for infection. Risk factors for exposure are so numerous and diverse that most adults, even those who don't think of themselves as at risk, may find themselves at risk at some point in their lives.

Infants and children have been routinely vaccinated since the 1990s. As a result, we see very little hepatitis B in the routinely vaccinated age groups; however, rates have been steady or rising in unvaccinated older adults. CDC recommends extending this vaccine protection to all adults in a catch-up vaccination program. This is a crucial step toward the goal of eliminating hepatitis B and the liver disease and cancer it causes.

Where can I find information about hepatitis B vaccination and post-vaccination testing for people who work in healthcare?

The ACIP HepB vaccine recommendations published in MMWR on January 12, 2018, remain in effect concerning vaccination of healthcare professionals, management of post-vaccination testing for evidence of immunity, revaccination considerations for nonresponders, and post-exposure management. Access these recommendations, beginning on page 18, at www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.pdf.

In light of the 2023 CDC hepatitis B screening recommendations, should a healthcare worker who needs to be tested for anti-HBs to confirm immunity after HepB vaccination have the triple panel screening test (anti-HBs, anti-HBc, HBsAg) instead of an isolated anti-HBs?

The 2023 CDC recommendation is for all adults to have a triple panel screen for hepatitis B at least once in a lifetime. If the healthcare worker has never been screened, it would be ideal to do the triple panel screen in this situation.

People with risk factors who are 60 and older *should* be vaccinated and other people older than 60 *may* be vaccinated. How does CDC intend clinics to handle people 60 and older?

Prior vaccine recommendations put the burden on the patient to ask for HepB vaccination if they wanted it. The recommendations published in 2022 make vaccinating adults much easier because CDC recommends that healthcare providers routinely offer HepB vaccine to ALL adult patients, including those over 60 without known risk factors. The idea of this change is to shift the burden of requesting vaccination off the patient and instead allow the provider to offer the vaccine routinely.

If the patient hasn't been screened for hepatitis B yet, should you screen them before you decide about vaccinating?

It seems tempting to wait for screening test results, but since this is a 2- or 3-dose series that most adults need, we do not recommend missing an opportunity to vaccinate. Vaccination today helps protect a person who needs it. Even for specialists who work with patient groups with an increased likelihood of previous infection, such as people who use injection drugs, we encourage administering the first dose just after screening (at the same visit). If results show no further vaccination is needed then the

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vaccine series can be stopped at that point. If the results show further vaccination is needed, as it will with most people, then only one or two more doses will be needed to complete the series.

Why does CDC recommend HepB vaccination of adults in settings (such as most pharmacies) where triple panel hepatitis B screening is not available?

Because HepB vaccination is a series of 2 or 3 doses of vaccine, and because most older adults need vaccination, we recommend initiating the series whenever and in whatever setting the opportunity arises. There's no downside to vaccinating, but delaying vaccination could leave someone vulnerable to infection. Patients who are vaccinated should be informed of the recommendation for a one-time triple panel screening test in the future.

If you are going to give HepB vaccine and draw the screening hepatitis B triple panel at the same visit, does it matter which one you do first?

Draw the blood for screening first. It is possible to detect HBsAg from the HepB vaccine in serologic tests up to 18 days after vaccination, so CDC recommends obtaining blood for the screening triple panel before administering the first dose of vaccine to avoid any chance of a false positive HBsAg result. If the triple panel screening test needs to be done later, wait one month after administration of the most recent dose of HepB vaccine.

What do I do for adult patients who don't have records of HepB vaccination, but are sure they were vaccinated?

CDC's General Best Practice Guidelines for Immunization states that, in general, you should only accept written records as proof of vaccination. If the person's recollection is wrong, and the person is susceptible, then not vaccinating leaves them at ongoing risk.

If you have no record of HepB vaccination and you intend to do the triple panel screen, it is reasonable to proceed with giving the first dose of HepB vaccine after drawing blood for screening. If that triple panel screening test shows evidence that further vaccination is not needed, or if the patient locates records later, then discontinue vaccination at that point. If screening is not done, and records are unavailable, complete the series. If you screen the patient after a partial HepB vaccination series, the screening results might show a positive anti-HBs antibody; however, you should complete the vaccine series to ensure the patient develops the intended long-term protection from infection.

Why should I do a triple panel screening test for hepatitis B status on people we know were vaccinated?

The triple panel is important for vaccinated adults to find out if they have evidence of current or past infection, which could have occurred before vaccination. Antiviral treatment may be needed in certain situations.

Do people who were properly vaccinated need to be revaccinated if they have a negative surface antibody (anti-HBs) result on their triple panel screening test for hepatitis B?

For most people the answer is NO. A negative anti-HBs result is a common finding when tested years after completing vaccination, and most healthy people may be reassured that they would still be protected from illness, if exposed.

Antibody titers naturally drift lower over the years; however, studies have shown that the majority of people who were effectively immunized decades earlier can mount an effective antibody response and prevent symptomatic or chronic infection after exposure. A study of members of the Alaskan Native population published in 2022 estimated that 86% had effective protection 35 years following vaccination. Even those few with serologic evidence of hepatitis B infection at some point after vaccination showed no evidence of active infection, which is the most important health outcome.

Revaccination is indicated for certain people at ongoing high risk, as specified in the 2018 ACIP recommendation (e.g., nonresponder infants born to people who tested positive for HBsAg, health care providers at risk of occupational exposure, and people on hemodialysis or with significant immunocompromise). For further details, see the 2018 ACIP recommendation, pages 23 and 24: www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.pdf.

Does it matter which HepB vaccine I use? Are there differences among the recommended products?

There are 4 different HepB vaccines approved for adults, plus the Twinrix (GSK) combination HepA-HepB vaccine. While all of the HepB vaccines licensed for adults are acceptable and recommended, with no preference among them expressed by ACIP, some of the differences among them are outlined below. Clinicians choosing among products may find it useful to consider these differences when making choices for their patient population.

The schedule for **Heplisav-B** (Dynavax) is 2 doses, given at least one month apart, while all other products require a 3-dose series given over a period of 6 months. **Twinrix** protects adults against both hepatitis A and B in 3 doses given over 6 months, if vaccination against both is desired. **Heplisav-B** and **PreHevbrio** (VBI), both show higher seroconversion rates among some groups that traditionally respond poorly to HepB; the immune response to **Engerix-B** (GSK) and **Recombivax-HB** (Merck) declines gradually after age 40, and may be lower in people who are obese or who have diabetes. **PreHevbrio** is the only HepB product that does not contain yeast, making it safe for yeast-allergic recipients. **Recombivax-HB** and **Engerix-B** are both recommended when vaccinating during pregnancy; neither Heplisav-B nor PreHevbrio are recommended during pregnancy at this time due to insufficient

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data available on the safety of these products when given during pregnancy. (Note: testing for pregnancy before HepB vaccination is not recommended.)

What do I do if a patient has documentation of one dose of HepB vaccine of unknown type a few years ago, but never finished the series?

If the vaccine type is unknown, but you have documentation, simply pick up the series where you left off and give dose 2 now—you never have to restart the vaccine series. The patient will need a total of three doses since the only 2-dose series option is for Heplisav-B. If you use Heplisav-B, complete the vaccination series by giving a dose now and a second Heplisav-B dose at least 4 weeks later. If you use any other HepB vaccine product, use a minimum interval of 8 weeks between dose 2 and dose 3 to complete the series. See the CDC's recommended immunization schedule for details, available at www.cdc.gov/vaccines/schedules/hcp/imz/adult.html.

What should I do if a patient needs screening for hepatitis B, but recently received the first dose of HepB vaccine elsewhere?

In general, this is not an issue, but CDC recommends waiting at least 1 month (4 weeks) after HepB vaccination before drawing blood for the triple panel screen for hepatitis B. HBsAg present in the HepB vaccine has been detected in serologic tests up to 18 days after vaccine administration. You do not have to delay the triple panel screen until after the vaccine series is complete, as long as it's been at least 4 weeks since the most recent dose. If you screen the patient after a partial HepB vaccination series, the screening results might show a positive anti-HBs antibody; however, you will still need to complete the vaccine series to ensure the patient develops long-term protection from infection.

What do I do with an adult whose triple panel hepatitis B screening result shows only the total core antibody (anti-HBc) is positive?

There are several potential interpretations of an isolated anti-HBc positive result (with a negative HBsAg and negative anti-HBs). Additional evaluation of the patient's immune status and risk history is needed. A 2011–2018 national survey found the prevalence of isolated positive anti-HBc is about 0.8%. The total anti-HBc tests are very accurate, at about 99.8% specificity; however, if a person has no risk factors for hepatitis B, the result

may be a false positive. Other possibilities include: a past resolved infection; an occult infection (HBV DNA is detectable but surface antigen is not detected); an early infection tested during the brief period of time before anti-HBs antibodies are detectable; or, an infection with a hepatitis B virus with a mutant surface antigen not detectable by standard tests. Depending upon the circumstances, consultation with a specialist may be helpful.

Additional resources for the evaluation of isolated anti-HBc antibody results are available from the University of Washington: www.hepatitisb.uw.edu/go/screening-diagnosis/diagnosis-hbv/core-concept/all and from CDC: www.cdc.gov/hepatitis/hbv/interpretationOfHepBSerologicResults.htm.

Adults go to many different healthcare providers over time. HepB is a vaccine series most only need once. How do we avoid the problem of lost records for adult patients we vaccinate now?

Documentation is very important to the success of the adult HepB catch-up vaccination program. First, give the patient a personal record: let them know that taking a digital photo of their record is wise. Second, all states have an immunization information system, known as an IIS or immunization registry. Check the IIS for the patient's vaccination records and report doses administered to the IIS to ensure a permanent record of vaccination exists that is accessible to other healthcare providers who need the information. This is the best way to minimize unnecessary repeated hepatitis B evaluation and vaccination in the future.

A healthy young adult patient who received the HepB vaccine series before college recently had a triple panel screen and discovered that he had chronic hepatitis B. Did the vaccine fail? What do I tell the patient?

While breakthrough infections can happen, it is very uncommon in an otherwise healthy young adult. In this scenario, it is unknown when the HBV infection occurred. It is possible that the person had an unrecognized exposure to hepatitis B virus at some time before they were vaccinated: they may even have been born to a hepatitis B-infected mother and infected at birth. This is the reason triple panel screening of every adult, regardless of vaccination history, is recommended. People who decline or defer screening but accept vaccination should understand that vaccination will not alter a pre-existing infection, which is why hepatitis B screening is important for everyone.