

# VIRAL HEPATITIS (A, B, AND C)

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## Hepatitis A, B, and C: Whom to Test and Vaccinate<sup>64</sup>

Most people with viral hepatitis do not know they are infected. Chronic viral infection with hepatitis B virus (HBV) and/or hepatitis C virus (HCV) is associated with cirrhosis, liver cancer, and liver failure. Complications can be prevented or mitigated by early detection, treatment, and lifestyle changes (e.g., reducing alcohol intake). Serologic testing is the primary means for identifying persons with viral hepatitis infection.

1. *All MSM are recommended for HAV vaccination.*
2. *All MSM are recommended for HBV testing and vaccination.*

We recommend that all MSM receive HBV vaccination and testing for hepatitis B surface antigen (HBsAg) and the antibody to hepatitis B surface antigen (anti-HBs) at the same visit. HBsAg testing is not a requirement for vaccination, and lack of testing should not limit vaccination. Following testing, if completed, patients who have negative HBsAg and negative anti-HBs should be given second and third doses per the vaccine schedule at 1 and 6 months post initiation. Patients with anti-HBs are immune and do not need follow-up doses. Patients with positive HBsAg should be evaluated for HBV infection and be linked to care. An alternate dosing schedule of four doses may be used in some populations and risk groups.

### 3. *Populations recommended for HCV testing:*

- Persons who currently or have ever injected illegal drugs, including those who injected only once many years ago
- Persons with selected medical conditions:
  - All persons with HIV infection, including annual screening for MSM with HIV infection
  - Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme test results)
  - Recipients of clotting factor concentrates made before 1987
  - Recipients of blood transfusions or solid organ transplants before July 1992
  - Recipients of blood or organs from a donor known to be HCV-positive
  - Patients who have ever received long-term hemodialysis
- Persons born during the years 1945-1965
- Children born to HCV-positive mothers should be tested after 18 months of age to avoid detection of maternal antibodies
- Persons with known HCV exposures (e.g., healthcare workers after needlesticks involving HCV positive blood)

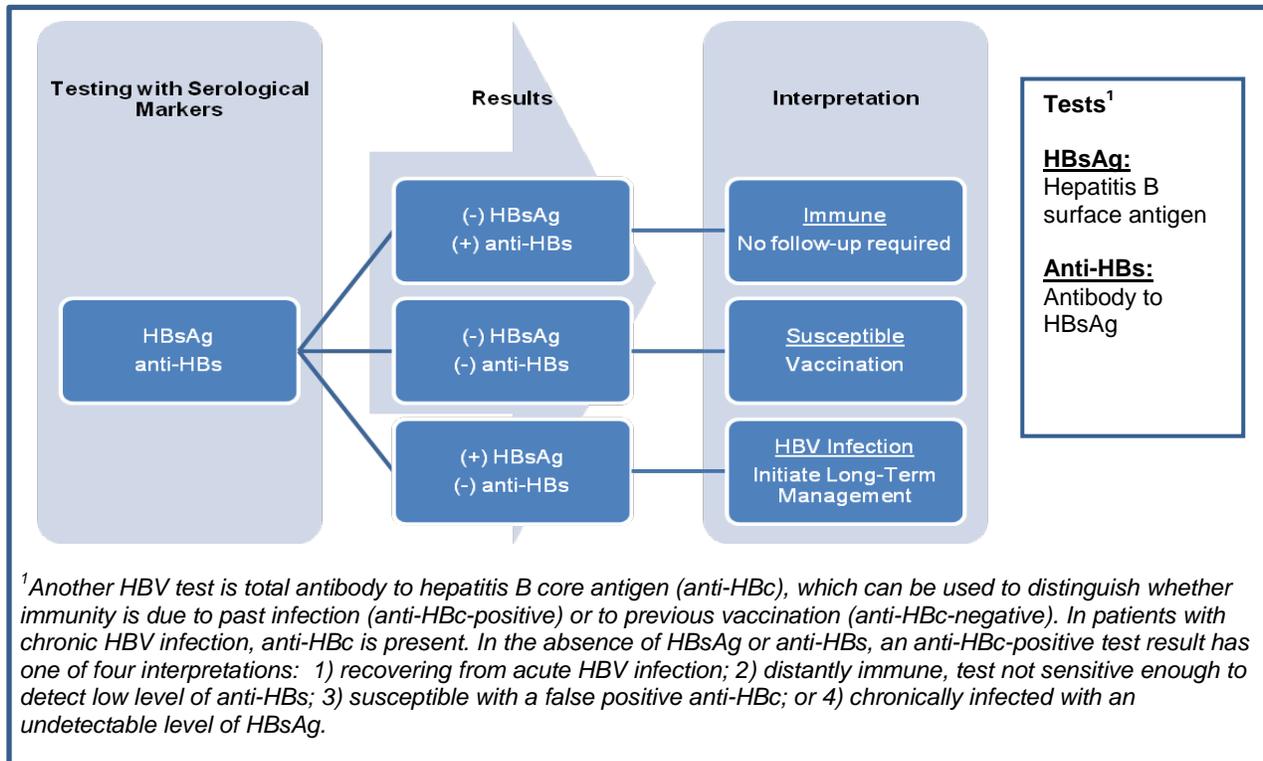
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<sup>64</sup> Access CDC recommendations and other clinical guidelines for viral hepatitis prevention, testing, management, and care as well as patient education materials at [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis) or [www.cdph.ca.gov/programs/Pages/ovhp.aspx](http://www.cdph.ca.gov/programs/Pages/ovhp.aspx).

## Hepatitis B Testing and Clinical Management

Hepatitis B is an infection caused by the hepatitis B virus (HBV). Chronic hepatitis B infection is associated with cirrhosis, liver cancer, and liver failure. These complications can be prevented or mitigated by treatment and lifestyle changes (e.g., reducing or eliminating alcohol use and practicing other forms of liver self-care). Serologic testing is the primary means for identifying persons with hepatitis B infection. An effective vaccine is available to prevent HBV transmission.

**Figure 15. HBV testing, interpretation, and follow-up**



Prepared by the California Department of Public Health

### HBV Vaccination for adults

- 3 doses are administered at 0, 1, 6 months; a combination HAV/HBV vaccine is available and follows the same dosing schedule.
- If partially vaccinated, the patient does not need to restart the series.
- Vaccination is safe and recommended for HIV-infected persons.
- Post-vaccine serology testing (anti-HBs) is recommended for household, needle-sharing, and sexual contacts of HBsAg-positive persons, HIV-positive persons, and healthcare workers.
- Booster doses may be indicated for HIV-infected persons, immunocompromised persons, and persons who do not develop effective immune response.
- Patients on hemodialysis and persons with known exposure to HBV may require 4 doses of HBV vaccine following a 0, 1, 2, 12 month schedule.

### *Principles of Long-Term HBV Management*

- Provide patient with culturally and linguistically appropriate educational materials (see links below).
- Report case to the local health department or via CalREDIE provider portal within seven days ([www.cdph.ca.gov/DATA/INFORMATICS/TECH/Pages/CalREDIEHelp.aspx](http://www.cdph.ca.gov/DATA/INFORMATICS/TECH/Pages/CalREDIEHelp.aspx)). Forms and contact information for reporting cases to the local health department can be accessed at: [www.cdph.ca.gov/healthinfo/Pages/ReportableDiseases.aspx](http://www.cdph.ca.gov/healthinfo/Pages/ReportableDiseases.aspx).
- Vaccinate against HAV (unless immune as indicated by presence of anti-HAV in serum).
- Encourage patient's sex partners, household members, and injection-drug sharing contacts to seek HBV testing, medical evaluation, and vaccination.
- Counsel patient to minimize consumption of alcohol and other liver toxins.
- Counsel patient to avoid sharing razors, toothbrushes, and personal injection equipment.
- Seek a HBV-experienced clinician to evaluate for, manage, and treat HBV infection.
- When referring patients, provide the following test results, if possible:<sup>65</sup>
  - Serologic and virologic tests:
    - anti-HBs
    - HBsAg
    - anti-HBc
    - HBeAg (hepatitis B e antigen)
    - anti-HBe (antibody to HBeAg)
    - HBV DNA
    - anti-HAV (HAV antibody)
    - anti-HCV (HCV antibody)
    - anti-HDV (Hepatitis Delta Virus antibody)
    - HIV
  - Other tests:
    - CBC with platelets
    - hepatic panel
    - PT/INR (prothrombin time/International Normalized Ratio)
    - AFP (alpha-fetoprotein)
    - ultrasound (if high risk per [AASLD guidelines](#))<sup>63</sup>
- Access clinical guidelines for HBV prevention, testing, management, and care as well as patient education materials at [www.cdc.gov/hepatitis/](http://www.cdc.gov/hepatitis/) or [www.cdph.ca.gov/programs/Pages/ovhp.aspx](http://www.cdph.ca.gov/programs/Pages/ovhp.aspx).

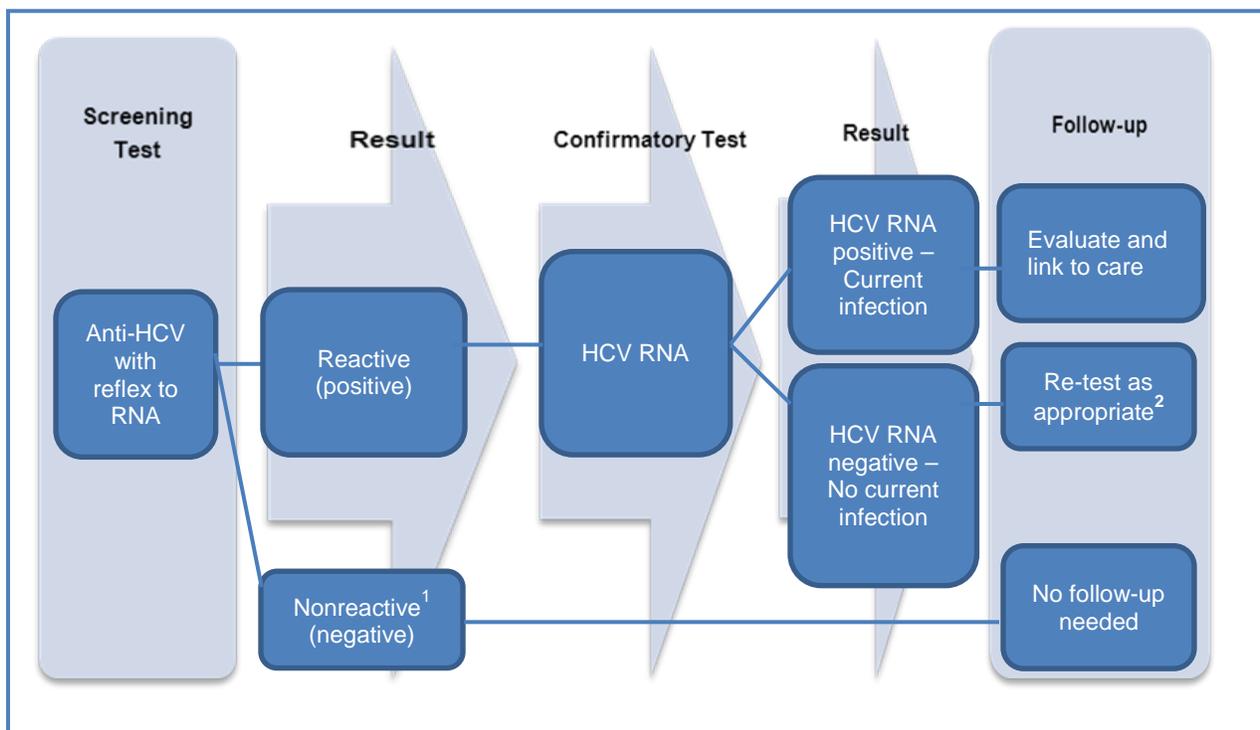
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<sup>65</sup> American Association for the Study of Liver Disease guidelines: [www.aasld.org/practiceguidelines/pages/default.aspx](http://www.aasld.org/practiceguidelines/pages/default.aspx)

## Hepatitis C Testing and Clinical Management

Hepatitis C is an infection caused by the hepatitis C virus (HCV). Chronic infection with HCV is associated with liver failure, cirrhosis, and liver cancer. Significant advances in the development of interferon (IFN) sparing antiviral agents have made current treatment options more effective and easier to tolerate than traditional IFN based regimens. HCV treatment may be managed in primary care settings. Treatment of HCV and lifestyle changes (such as eliminating alcohol use) can prevent or mitigate the complications of chronic hepatitis C infection. Serologic testing is the primary way to identify persons with hepatitis C infection. Currently, no vaccine is available to prevent transmission of HCV.

**Figure 16. HCV testing, interpretation, and follow-up<sup>66</sup>**



Prepared by the California Department of Public Health

*Anti-HCV: Detects the presence of antibodies to the virus, indicating exposure to HCV*

*HCV RNA: Detects the presence (qualitative) or amount (quantitative) of virus and to diagnose current infection*

<sup>1</sup> For persons who might have been exposed to HCV within the past 6 months, qualitative testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

<sup>2</sup> To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

<sup>66</sup> MMWR 2013, 62 (18):362-365. [www.cdc.gov/mmwr/preview/mmwrhtml/mm6218a5.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6218a5.htm)

### ***Evaluation and Management***

- Report case to local health department or via CalREDIE provider portal within 7 days ([www.cdph.ca.gov/DATA/INFORMATICS/TECH/Pages/CalREDIEHelp.aspx](http://www.cdph.ca.gov/DATA/INFORMATICS/TECH/Pages/CalREDIEHelp.aspx)). Forms and contact information for reporting cases to the local health department can be accessed at: [www.cdph.ca.gov/healthinfo/Pages/ReportableDiseases.aspx](http://www.cdph.ca.gov/healthinfo/Pages/ReportableDiseases.aspx).
- Vaccinate patient against HAV and HBV unless immune.
- Seek a HCV experienced clinician to evaluate for, manage, and treat chronic HCV infection, either by referral or through clinical consultation.
- When referring patient, provide the following test results, if possible:<sup>67</sup>
  - Serologic and virologic tests:
    - anti-HBs
    - HBsAg
    - anti-HAV (HAV antibody)
    - anti-HCV (HCV antibody)
    - HCV RNA, quantitative
    - HCV genotype with subtype
    - HIV
  - Other tests:
    - CBC with platelets
    - hepatic panel
    - PT/INR (prothrombin time/International Normalized Ratio)
    - AFP (alpha-fetoprotein)
    - ultrasound (if high risk per [AASLD guidelines](#))<sup>65</sup>
- Access clinical guidelines for HCV prevention, testing, management, and care at [www.hcvguidelines.org/](http://www.hcvguidelines.org/) or the CDPH Office of Viral Hepatitis Prevention webpage: [www.cdph.ca.gov/programs/Pages/HepatitisCGuidelines.aspx](http://www.cdph.ca.gov/programs/Pages/HepatitisCGuidelines.aspx)

### ***Patient Counseling***

- Counsel patient on the meaning of the test results: a positive HCV antibody test result indicates exposure to HCV (past or present infection); HCV RNA testing is needed to diagnose current HCV infection.
- Advise patient to reduce or eliminate intake of alcohol and other liver toxins
- Counsel patient to practice safer injection, avoid sharing personal items that might have blood on them, such as razors, and follow infection control guidelines in healthcare settings.
- Counsel patient to practice safer sex when engaging with multiple sex partners or persons infected with HIV.
- Provide patient with culturally and linguistically appropriate educational materials.

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<sup>67</sup> American Association for the Study of Liver Disease guidelines: [aasld.org/practiceguidelines/pages/default.aspx](http://aasld.org/practiceguidelines/pages/default.aspx).

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