



Preventing Chronic Hepatitis B in Children

Guidelines for Pediatric Providers

BACKGROUND

Approximately 350 million people worldwide and 1.2 million Americans are chronically infected with hepatitis B, but 65% are unaware of their infection.^{1,2} Chronic hepatitis B infection has a disproportionate impact on some populations, specifically Asians and Pacific Islanders (API) who make up >50% of chronic hepatitis B cases. Hepatitis B infection acquired via mother to child transmission at birth is associated with a 90% risk for chronic infection. In addition, 25-50% of 1-5 year old children infected by household contacts will progress to chronic infection, compared to 5-10% of adults who become infected. Chronic hepatitis B infection carries a 25% risk of death from liver failure or hepatocellular carcinoma.³ A heightened awareness of at risk children is needed among pediatricians because chronic hepatitis B in children is typically asymptomatic and blood tests for liver enzymes may be normal. Appropriate screening and vaccination strategies are the keys to prevention.

OBTAINING MATERNAL HISTORY

- **Obstetric providers are mandated to test pregnant women for hepatitis B surface antigen (HBsAg)** per California Health and Safety Code, Section 125085. HBsAg testing should be ordered at an early prenatal visit. A copy of the laboratory report documenting the woman's HBsAg status should be sent to the delivery hospital. Ensure that maternal HBsAg results are reviewed at the time of the infant's birth.

ENSURE POST-EXPOSURE PROPHYLAXIS AT BIRTH FOR AT-RISK INFANTS

- **For infants of HBsAg positive mothers:** Administer hepatitis B vaccine and HBIG within 12 hours of birth.
- **For infants of HBsAg unknown status mothers:**
 - For infants weighing <2 kg – administer hepatitis B vaccine and HBIG within 12 hours of birth
 - For infants weighing >2 kg – administer hepatitis B vaccine within 12 hours of birth. If mother is found to be HBsAg positive, administer HBIG as soon as possible and no later than 7 days after birth; discharged infants should be recalled and given HBIG.
- **For infants of HBsAg negative mothers:** Administer hepatitis B vaccine before discharge to all infants weighing ≥ 2 kg.
- **For additional information, please see:** <http://www.cdc.gov/hepatitis/HBV/PerinatalXmntn.htm> or <http://www.cdph.ca.gov/HealthInfo/discond/Pages/PerinatalHepatitisBPrevention.aspx>

FOLLOW-UP OF INFANTS BORN TO HBsAg POSITIVE MOTHERS

- Contact the local health department to ensure that these infants are followed by a case management program.
- **Make sure that the infant completes the hepatitis B vaccine series on schedule**
 - For additional information, please see: <http://www.cdc.gov/mmwr/PDF/rr/rr5416.pdf>
- **Document vaccine administration and provide the Hepatitis B Vaccine Information Statement**
 - To obtain a VIS, download it from the CDPH website at: <http://www.cdph.ca.gov/programs/immunize/Pages/VaccineInformationStatements.aspx>
- **Check post vaccination serology with HBsAg and anti-HBs testing 1-2 months after completing the vaccine series (9-18 months of age)** to make sure they are protected against hepatitis B (anti-HBs ≥ 10 mIU/mL) and have not become infected (HBsAg negative).
- **Revaccinate** non-immune (anti-HBs <10 mIU/mL) infants who are HBsAg-negative with a second three dose vaccine series and retest 1-2 months after the third dose of vaccine.
- **Ensure that HBsAg-positive infants receive appropriate medical follow-up** (see next page) and are reported to their local health department as a perinatal hepatitis B case
- **Educate HBsAg positive mothers that their test results** indicate that they have chronic hepatitis B and that they should seek care with a hepatologist.
- **Advise HBsAg positive women that breastfeeding is safe** if their infant receives HBIG and hepatitis B vaccine at birth.



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- **Ask about household contacts and siblings.** Refer close contacts and family members for HBsAg and anti-HBs testing to see if they are chronically infected with hepatitis B or are unprotected against hepatitis B and should get vaccinated.

GENERAL SCREENING

- All persons born in geographic areas with an HBsAg prevalence of >2% should get a one-time test for **HBsAg and anti-HBs** to identify chronic infection or the need for vaccination.
 - These areas include all of Asia and Pacific Islands, Africa, the Middle East, the South American Amazon basin and most of Eastern Europe.
 - All children born to immigrant parents from these endemic areas should also be screened regardless of immunization history.
 - All children living in a household with a known HBsAg positive person should be screened.

MANAGEMENT OF CHILDREN WITH CHRONIC HEPATITIS B^{4,5}

- Perform a yearly physical exam on all children chronically infected with hepatitis B (HBsAg remains positive after 6 months).
- Determine if there is a family history of hepatocellular carcinoma (HCC) or liver disease.
- Refer to a pediatric gastroenterologist for baseline tests and long term monitoring.
 - Baseline labs: ALT, CBC, HBeAg, Anti-HBe, Anti-HBc, HBV DNA by PCR, AFP; and
 - Baseline abdominal ultrasound.
- Long-term monitoring:
 - ALT and AFP every 6-12 months;
 - Abdominal ultrasound (usually every 1-2 yrs, but sooner if a family history of HCC, if ALT or AFP are elevated, or if cirrhosis is present).
- Treatment if indicated with antiviral medication under the guidance of a pediatric gastroenterologist.

DEFINITIONS

- HBsAg (hepatitis B surface antigen) = Detection of acutely or chronically infected people.
- Anti-HBs (hepatitis B surface antibody) = For persons who test negative for HBsAg, anti-HBs levels over 10 mIU/mL indicates immunity to hepatitis B either from prior vaccination or resolved infection.
- HBeAg (hepatitis B e antigen) = Identification of infected people at increased risk of transmitting HBV.

RESOURCES

Provider Handbook and patient educational brochures in many languages are available at hepbmoms.org

DISCLAIMER

For public health clinical guidelines: These guidelines are intended to be used as an educational aid to help clinicians make informed decisions about patient care. The ultimate judgment regarding clinical management should be made by the health care provider in consultation with their patient in light of clinical data presented by the patient and the diagnostic and treatment options available. Further, these guidelines are not intended to be regulatory and not intended to be used as the basis for any disciplinary action against the health care provider.

REFERENCES

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