

a series of fact sheets written  
by experts in the field of liver  
disease

# *HBV:*

## *Preventing Mother- to-Child Hepatitis B Infection*

Christine Kukka, HBV Project Manager

**Pregnant women who have hepatitis B frequently infect their newborns. The concentration of hepatitis B virus (HBV) present in their blood and body fluids can be so high that up to 90 percent of their newborns may become infected due to contact with the virus in their mothers' blood and body fluids.**

Infants who are infected at birth face the highest risk of developing chronic or life-long hepatitis B infection because their young immune systems often fail to notice the viral invaders replicating in their livers. Years or even decades may pass before their immune systems finally notice the viral infection and try to eradicate the virus.

But whether or not newborns born to infected mothers contract hepatitis B depends primarily on their mothers' viral status, and whether they are immediately immunized against hepatitis B. The length of labor, whether or not membranes rupture or the type of

delivery (Caesarean vs. vaginal) apparently has little impact on mother-to-child transmission of hepatitis B.

According to a report issued by the Advisory Committee on Immunization Practices in the *Morbidity and Mortality Weekly Report*, infants born to mothers who tested positive for both the hepatitis B surface (HBsAg) and "e" (HBeAg) antigens faced a 70 to 90 percent risk of infection, with 85 to 90 percent of those infants becoming chronically infected. Infants born to mothers with the surface antigen and "e" antibody only faced a 31 percent risk of HBV infection.

Infections acquired during infancy, while estimated to represent only 1 to 3 percent of hepatitis B cases in the United States, account for 20 to 30 percent of chronic infections, according to the Centers for Disease Control and Prevention (CDC).

But there is good news for HBV-infected women who are pregnant or planning to become pregnant. When a baby is born to an infected mother who has the surface and "e" antigens, if hepatitis B immune globulin (HBIG) and the first dose of the hepatitis B vaccine is administered to the newborn within 12 hours of birth, the baby's risk of HBV infection is reduced to only 5 to 15 percent.

HBIG contains antibodies to the hepatitis B virus and offers immediate but short-lived protection against HBV infection. When combined with the hepatitis B vaccine, HBIG reduces the risk of HBV infection by an additional 5 to 10 percent. In the United States, infants born to HBV-infected mothers should receive HBIG and the first hepatitis B vaccination shot within 12 hours of birth.

But even if a baby does not receive HBIG, the vaccine is by itself highly effective in blocking HBV infection. In one study conducted in Thailand, 97 babies born to HBV-infected women who had the "e" antigen received only the vaccination against hepatitis B at birth. Even without the added protection of HBIG, 82 to 86 percent of the immunized infants remained free of HBV infection.

It is recommended that obstetricians should screen all pregnant women for hepatitis B. If a doctor is not

screening a pregnant woman for hepatitis B, she should ask for the test. According to the CDC, in 1999 about 19,000 women with chronic hepatitis B gave birth in the United States, and 1,455 of their newborns became infected because they were not immunized immediately after birth.

Infected mothers should make sure ahead of time that healthcare workers know they are infected so their newborns are immediately immunized and treated with HBIG.

To be fully protected, it is very important that babies must receive all three hepatitis B immunization shots. The second shot is administered two months after the first, and the third is administered about four months later.

Because of concerns about a mercury-based vaccine preservative called thimerosal, some parents unfortunately postponed immunizing their children against hepatitis B. However, today there is a thimerosal-free hepatitis B vaccine available and this immunization has repeatedly been found to be extremely safe.

The vaccine was recommended for all infants and unimmunized children and adolescents in 1991 by the CDC and the American Academy of Pediatrics. Since then, more than 86 million doses of hepatitis B vaccine have been given to children in the United States.

HBV-infected mothers can safely breastfeed their infants, according to the CDC. While the surface antigen – the outer coating of the virus – is found in breastmilk, there are no intact viruses in breastmilk that can infect infants. Studies have shown that breast-fed infants who were immunized immediately after birth were not at increased risk of HBV infection when compared to infants who were not breast-fed.

Immunization of newborns has been very successful in the United States in reducing hepatitis B. Hepatitis B infections have declined by two-thirds during the past decade due to routine childhood vaccination. CDC officials say the overall number of hepatitis B cases dropped 67 percent between 1990 and 2002, with the greatest decrease – 89 percent – in the newborn-to-19-year-old age group.

*For more information about the hepatitis B immunization, visit the following websites.*

**Centers for Disease Control and Prevention website on hepatitis B immunization:** <http://www.cdc.gov/ncidod/diseases/hepatitis/b/factvax.htm>

**Immunization Action Coalition** provides extensive information on all childhood immunizations, including hepatitis B.  
<http://www.immunize.org>

**National Network for Immunization Safety** provides up-to-date, science-based information about immunization.  
<http://www.immunizationinfo.org>

**American Academy of Pediatrics**, an organization of 57,000 pediatricians, issues recommendations to ensure childhood health and safety.  
<http://www.aap.org>

*For more information about the hepatitis B, visit the following websites.*

**Hepatitis B Foundation:**  
<http://www.hepb.org>

**HIVandHepatitis.com**  
<http://hivandhepatitis.com>

***For more information about hepatitis C, hepatitis B and HCV coinfections, please visit [www.hcvadvocate.org](http://www.hcvadvocate.org).***

## • hcspFACTsheet •

A publication of the Hepatitis C Support Project

**Executive Director**  
**Editor-in-Chief, HCSP Publications**  
Alan Franciscus

**HBV Project Manager**  
Christine Kukka

**Design**  
Paula Fener

**Production**  
C.D. Mazoff, PhD

**Contact information:**  
Hepatitis C Support Project  
PO Box 427037  
San Francisco, CA 94142-7037

[alanfranciscus@hcvadvocate.org](mailto:alanfranciscus@hcvadvocate.org)

*The information in this fact sheet is designed to help you understand and manage HBV and is not intended as medical advice. All persons with HBV should consult a medical practitioner for diagnosis and treatment of HBV.*

This information is provided by the Hepatitis C Support Project • a nonprofit organization for HCV, HBV and HCV/HIV coinfection education, support and advocacy • © 2004 Hepatitis C Support Project • *Reprint permission is granted and encouraged with credit to the Hepatitis C Support Project.*