

No Risk?? No Way!!

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A common argument against routine hepatitis B immunization for infants is the belief that many of these infants have virtually no risk or an extremely low risk of ever contracting the hepatitis B virus in their lifetimes.

These low-risk individuals are usually defined by their race, socioeconomic status, geographic residence, and the lack of obvious risk factors. For example, a fourth generation farmer in northern Wisconsin is presumed to be safe from hepatitis B virus (HBV) while an Asian immigrant or pregnant teenager is considered to be "high risk." While degrees of risk certainly exist, facts do not support the existence of a "no risk" category, however comforting this notion might be to those who consider themselves in this group.

There are two major problems with not vaccinating all infants due to "low risk." The first is that transmission can sometimes occur in uncommon ways. Consider the six following documented cases:

1. Twenty-two cases of hepatitis B were linked to a Florida dermatologist's practice. Since the dermatologist was not a carrier, the outbreak is believed to have resulted from inadequate sterilization methods after surgical procedures. One of the cases was not a patient of the dermatologist, but the sexual partner of one of the infected patients (1).

2. From June 1989 through March 1990, 26 patients in a California hospital contracted acute HBV infection. A retrospective cohort study indicated that transmission of the virus occurred percutaneously through contamination of the stabilizing platform on a spring-loaded finger-stick device. Many medical offices use these devices to obtain capillary blood samples for checking hemoglobins and blood sugars (2).

22 cases of hepatitis B were linked to a Florida dermatologist's practice

3. In Rhode Island, 35 patients of an acupuncturist became infected with HBV, the primary source for the outbreak being a patient. Investigators were not able to determine the precise mechanism of transmission but it was possibly due to inadequately sterilized needles or the transfer of infectious material from the acupuncturist's hands to sterilized needles (3).

4. Thirty-one clinical cases of hepatitis B occurred among clients of a weight loss clinic in California. Infected persons had all received daily parenteral injections of human chorionic gonadotropin via a jet injector. The CDC

proved that such a jet injector could transmit HBV despite proper swabbing of the tip, due to the inaccessibility of contaminated surfaces under the nozzle and cap (4).

5. In Israel, a butcher who was an asymptomatic hepatitis B carrier, infected three of his co-workers who in turn infected all of their spouses. Because of the nature of a butcher's work, the virus could have been transmitted through contact with HBV contaminated blood on the shared knives, either through hand cuts or punctures of the skin by the knife (5).

26 patients in a California hospital contracted acute HBV

6. In Japan, during a one-year period, hepatitis B developed in five of ten members of a high school sumo wrestling club. The asymptomatic index case had often bled from injuries received while wrestling, thereby transmitting HBV percutaneously to his teammates through cuts and abrasions (6).

The second problem with not vaccinating all infants against hepatitis B is that it is dangerous to make vaccination decisions based on a person's ethnicity, geographic area, or income. While farm families in northern Wisconsin may have a low risk of contracting hepatitis B, any individual within that group may have risk factors associated with family history or life style that make infection more likely. The following two histories involve persons traditionally considered at low risk for hepatitis B:

1. In August of 1977, physicians in northern Minnesota reported an unusual cluster of hepatitis B cases in their area. The outbreak continued for a year, beginning in International Falls then spreading to Hibbing, Ely, Bemidji, and Grand Marais, and eventually included 100 persons, four of whom suffered hepatic coma. Investigators discovered that the outbreak began in International Falls, a "low risk" town, best known for its cold temperatures, where workers in a paper mill shared a needle while injecting drugs (7).

2. In the same year, four cases of hepatitis B were reported in the northern suburbs of Minneapolis, after junior high students used a contaminated needle to tattoo themselves. Amateur tattooing is engaged in by young people from every socioeconomic group. Unfortunately, hepatitis B can have more lasting consequences than a poorly executed cross or heart (8).

These aforementioned cases of hepatitis B have not been highlighted to imply that the hepatitis B virus is hiding on every available surface just waiting to jump on the next unsuspecting victim. They do, however, indicate that one does not need to be sexually promiscuous or an inner-city IV drug abuser to come into contact with HBV. One can simply be the sexual partner of a man with a skin condition requiring treatment. These cases merely illustrate that a clinician cannot accurately determine all risk factors without knowing what goes on behind the closed doors of a patient's life.

While there are degrees of risk involved in contracting hepatitis B, these cases show there is no such thing as "no risk." On the average, any baby born in the United States has a five percent chance of acquiring HBV infection during his or her lifetime. By avoiding obvious means of exposure, people can reduce their odds of becoming infected. If they never go to the physician or dentist, never get their ears pierced or get a tattoo, never get bitten by a classmate, never engage in contact sports, never indulge in sex, never become a dentist, physician, nurse, medical assistant, laboratory technician, paramedic, police officer, maintenance worker, or butcher, they could possibly be considered "no risk." But in reality, as the U.S. Public Health Service so succinctly states, "Anyone can get HBV infection" (9). The good news is that since the advent of hepatitis B immunization, no one has to.

1. Florida State Health Office. Hepatitis B infection associated with a dermatologist's practice. *Epi-Gram*, Nov 1991;12:6.
2. Polish LB et al. Nosocomial transmission of hepatitis B virus associated with the use of a spring-loaded finger-stick device. *N Engl J Med* 1992;326:721-5.
3. Kent GP et al. A large outbreak of acupuncture-associated hepatitis B. *Am J Epidemiol* 1988;127:591-8.
4. Canter J et al. An outbreak of hepatitis B associated with jet injections in a weight reduction clinic. *Arch Intern Med* 1990;150:1923-27.
5. Mevorach D et al. Hepatitis B - an occupational risk for butchers? *Ann Intern Med* 1992; 116:428.
6. Kashiwagi S et al. An outbreak of hepatitis B in members of a high school sumo wrestling club. *JAMA* 1992;248:213-214.
7. International Falls: hepatitis increase worries health officials. *Minneapolis Tribune*, July 4, 1978.
8. Cope L. Amateur tattooing causes hepatitis. *Minneapolis Tribune*, May 16, 1978.
9. U.S. Dept. of Health and Human Services. Important information about hepatitis B, hepatitis B vaccine, and hepatitis B immune globulin. May 1992. ♦

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