Your question is one that opens a window on a set of diseases that globally are of great concern. There are several viruses that specifically target the liver and cause inflammation of its tissue. Depending on the immune response, the virus can be eradicated with subsequent immunity. However, should the immune system prove inadequate to the task, a chronic, often lifelong infection results, which is called a “carrier” state. There are three common hepatitis viruses: A, B, and C.

Hepatitis A is an acute infection, usually relatively mild, in which the liver inflammation will commonly result in jaundice, a yellow pigment seen often in the white of the eye; mild nausea; a feeling of being generally unwell; and mild fevers that last a few weeks. Some cases will cause such minimal symptoms as to not be diagnosed, and yet the occasional case is so severe that the person becomes extremely ill. This virus is spread from the feces of infected patients—the so-called “fecal-oral” transmission. The importance of hand washing and good sanitation cannot be overemphasized. Usually, where water supplies are unsafe, hepatitis A is a major concern because the virus easily bypasses most filtration systems, since it is so small. The boiling of water is very important in such situations.

Hepatitis B is a more serious infection. It may cause an acute infection, but more important, it may become chronic, with a resultant risk of liver cancer. It is also extremely prevalent. Gregory A. Poland, M.D., and Robert M. Jacobson, M.D., in an article in the New England Journal of Medicine, report hepatitis B infection to be endemic in Africa, eastern Europe, the Middle East, central Asia, China, Southeast Asia, the Pacific Islands, and the Amazon basin (vol. 351, No. 27, Dec. 30, 2004). Up to 70 percent of the population in those areas show evidence of prior infection, and 8 to 15 percent have chronic infection. This means that 2 billion people have been infected, and 350 million are carriers. An estimated 1 million people die each year from cirrhosis and hepatocellular cancer, which is a direct result of hepatitis B infection. Widespread immunization has led to a dramatic reduction in the occurrence of chronic hepatitis B infection, with such a reduction in liver cancer that the vaccine can be considered the first anticancer vaccine.

The transmission of hepatitis B is not by the “fecal-oral” route. Blood seems to be the major transmitting agent, and contaminated needles or blood products are important concerns. Sexual transmission is prevalent, and mother-to-infant transmission is often seen.

Nonsexual household contact also is implicated, though in one third of cases the exact way of spread is not demonstrable.

Hepatitis C is most commonly spread by blood products or contaminated needles or surgical instruments. The infection is more severe than hepatitis B in many cases, and results in an active chronic hepatitis that may lead to liver failure.

Vaccines are available for both hepatitis A and B, but not hepatitis C. Medical treatments with current costly...
antiviral strategies are showing much promise in hepatitis, but the statistics show prevention by immunization, where possible, is the best preventive option at this time.

In 1991 the Advisory Committee on Immunization Practices (ACIP) recommended a program aiming to eradicate hepatitis B transmission in the U.S.A. Several vaccines are available—one even is a double-headed vaccine for both hepatitis A and B (Twinrix).

The program began by recommending immunizing of all infants (where infection is more likely to result in a chronic carrier state), and was expected to include adolescents in 1995. By 1999 the program recommended all persons under the age of 18 be immunized. Data collected has shown a reduction from 8.5 cases per 100,000 per year to 2.2 cases per 100,000 per year, between 1990 and 2002 in the United States. This is a 74 percent reduction. The potential exists globally, therefore, of a 74 percent reduction from the 2 billion persons who have been infected or the 350 million with chronic infection.

Concerns about risks of vaccine-induced disease have not been substantiated in multiple scientific studies. The conclusion of several independent scientific bodies is that the hepatitis B vaccine is both safe and effective.

Sometimes there is an absence of response to the vaccine. This is seen more commonly in older adults. Immunization should take place in adolescence, as this appears to be an ideal age to receive the vaccine. It is not inadvisable for a pregnant woman to receive vaccine, because the vaccine does not contain live virus—only pieces of the virus that trigger the immune response.

After this lengthy reply, I would summarize my answer by saying that I would positively consider the offer of immunization for hepatitis if I were you.

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