

# Hepatitis B: Where do we stand now?

By Greg Schaffer, BA, EMT-P

I was in a recent discussion with a group of responders who were concerned about their Hepatitis B immune status. It seems that these responders were tested recently as a part of a routine Health and Wellness Physical. Many of the responders found that they no longer had titers, or a protective antibody response, strong enough to suggest immunity to Hepatitis B. Though they had received the Hepatitis B vaccination many years ago. They now felt they had no immunity. There were many different "experts" in the mix who offered their assessment of the situation. But, what was the truth?

It seems this agency, like many others at that time, administered Hepatitis B vaccinations but never tested the employee to see if proper titers were obtained following the vaccinations. This left a dilemma - did they EVER receive immunity?

Many responders are in the same situation, and may not even know it. Others may realize their predicament, but may have received bad information, or know where to turn for good information. Worse yet, many of us can get bogged down in our daily lives and simply forget to care for ourselves, until the big E word creeps upon us. Yes, that's right, EXPOSURE. So it is time to take a look at where we stand. First, let's review some of the basic facts about Hepatitis B and Hepatitis B vaccinations for healthcare workers.

## A Quick Review

Hepatitis B is a serious disease caused by a virus that attacks the liver. The virus, which is called hepatitis B virus (HBV), can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure, and death. The virus is transmitted through blood and infected bodily fluids. This can occur through direct blood-to-blood contact, unprotected sex, use of dirty needles, and from an infected woman to her newborn during the delivery process.

There is a simple blood test to find out if you have been infected. There is also a safe and effective vaccine to protect you against hepatitis B. Many new treatments are also available now for those who have developed chronic hepatitis B infections.

The hepatitis B virus is 100 times more infectious than the AIDS virus. The hepatitis B virus is a small DNA virus that belongs to the Hepadnaviridae family of viruses. The hepatitis B virus causes hepatitis B in humans.

Most healthy adults (90%) who are infected will recover and develop protective antibodies against future hepatitis B infections. A small number (5-10%) will be unable to get rid of the virus and will develop chronic infections. Unfortunately, this is not true for infants and young children — 90% of infants and up to 50% of young children infected with hepatitis B will develop chronic infections.

## Hepatitis B World Statistics

- 2 billion people have been infected (1 out of 3 people).
- 400 million people are chronically infected.
- 10-30 million will become infected each year.
- An estimated 1 million people die each year from hepatitis B and its complications.
- Approximately 2 people die each minute from hepatitis B.

## Hepatitis B - United States Statistics

- 12 million Americans have been infected (1 out of 20 people).
- More than one million people are chronically infected.
- Up to 100,000 new people will become infected each year.
- 5,000 people will die each year from hepatitis B and its complications.
- Approximately 1 health care worker dies each day from hepatitis B.

## *The Good News is...*

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The good news is there is a vaccination to protect us as we go about doing good, and caring for many sick patients in our career. Otherwise, many of these patient contacts would put us at risk, if we did not have immunity. For this reason it is important that you do have immunity.

Hepatitis B vaccine prevents hepatitis B disease and its serious consequences like hepatocellular carcinoma (liver cancer). For this reason it has been called "the first anti-cancer vaccine."

Long-term studies of healthy adults and children indicate that hepatitis B vaccine protects against chronic HBV infection for at least 15 years, even though antibody levels might decline below detectable levels.

Following the series of three doses you should then have HBsAb blood test drawn to assure immunity to hepatitis B infection. Post-vaccination Testing is recommended for healthcare workers who have contact with blood. Post-vaccination testing should be completed 1-2 months after the third vaccine dose for results to be meaningful. A protective or "positive" antibody response is 10 or more milliinternational units ( $\geq 10$  mIU/mL).

A "positive" or "reactive" HBsAb (or anti-HBs) test result indicates that a person has successfully responded to the hepatitis B vaccine or has recovered from an acute hepatitis B infection. This result means that you are immune to future hepatitis B infection and you are not contagious.

Many people start the hepatitis B vaccination series, but don't complete the 2nd and 3rd dose on schedule. You may wonder if this can affect immunity or if you should start the series over. According to the CDC the answer is no, there is no need to restart the series. If the series is interrupted after the first dose, the second dose should be given as soon as possible, and the third dose at least 2 months after the second. If only the third dose is delayed, it should be given as soon as possible. The standard dose routine for adults is 1st dose, 2nd dose at one month, and 3rd dose at six months, however this may vary.

#### **Where do you stand?**

You may have both received the hepatitis B vaccination, and been tested to see that you responded to the vaccine and have antibodies. You can now feel good about where you stand. However, you may be like our group of employees we discussed earlier and be left with more questions than answers.

If you received the hepatitis B vaccination years ago, and were never tested for antibodies afterward, how do you know you ever had antibodies in the first place?

If your agency tells you that the recommendations are that you may lose the antibody but still be protected they are correct. However, the question now is, "Did you ever have antibodies?"

The current recommendation by the CDC on booster doses is this:

- Current data show that vaccine-induced hepatitis B surface antibody (anti-HBs) levels may decline over time; however, immune memory (anamnestic anti-HBs response) remains intact indefinitely following immunization. Persons with declining antibody levels are still protected against clinical illness and chronic disease.
- For health care workers with normal immune status **who have demonstrated an anti-HBs response following vaccination**, booster doses of vaccine are not recommended nor is periodic anti-HBs testing.

So, for the healthcare workers who never demonstrated an anti-HB response following vaccination, because they were not tested, booster doses may indeed be called for as well as an HBsAb, or surface antibody being drawn and tested to see if you have acquired immunity.

Where does that leave our group of employees, with whom we first begin our discussion? They need to arm their selves with information, and communicate with their department's infection control officer. This communication should be put in writing so that there is a paper trail, in case there is an exposure and management says that they never were made aware.

Chances are good that the department does want to do what's right, and may simply not be aware. After all standards change and recommendations are revised. You just don't want your health caught in the middle.

Last but not least, do some research yourself occasionally. Those like the infection control officers, who are charged with our health and safety in the workplace, may not be aware of the current standards, or their implications. We live with the results of other people's decisions, or indecision. Make sure they are right!

Tell us [what you think in the forums!](#)

Until next time... Be safe, and healthy!

Resources:

[www.cdc.gov](http://www.cdc.gov)