The meaning of a positive hepatitis B core antibody (HBcAb) test depends on the type of antibody. A patient who is IgM positive has recently been infected with the hepatitis B virus. Positivity to IgG antibody could indicate past infection or a chronic infection with hepatitis B virus. Dr. Tan suggested a three-step process for initial interpretation of the panel of tests:

- If the HBsAg is negative and the HBsAb is positive, then the patient is immune to hepatitis B.
- If the HBsAg is positive and the HBsAb is negative, then the patient has either acute or chronic hepatitis B infection.
- If the HBsAg and HBsAb are negative and the HBcAb is positive, this could be a false-positive result, or the patient is chronically infected or recovering from acute infection, or may be immune to hepatitis B but the HBsAb level is too low to be detected.

A fourth test, for hepatitis B e antigen (HBeAg), is a marker of infectiousness. People with HBeAg have high concentrations of hepatitis B viral DNA and are at high risk of transmitting the infection. The tests may need to be repeated over time to assess the patient’s status.

**Hepatitis B Panel Interpretations**

<table>
<thead>
<tr>
<th>HbsAg</th>
<th>HbsAb</th>
<th>HbcAb</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>−</td>
<td>+</td>
<td>+</td>
<td>Susceptible to hepatitis B</td>
</tr>
<tr>
<td>+</td>
<td>−</td>
<td>+</td>
<td>Immune because of natural infection</td>
</tr>
<tr>
<td>−</td>
<td>+</td>
<td>+</td>
<td>Immune because of hepatitis B vaccination</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>(IgM)</td>
<td>Acutely infected</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>(IgG)</td>
<td>Chronically infected</td>
</tr>
<tr>
<td>+</td>
<td>−</td>
<td>+</td>
<td>Recovering from acute infection; or false-positive HBcAb result; or chronic infection; or immune but HBsAb level too low to detect</td>
</tr>
</tbody>
</table>

Notes: HbsAg is hepatitis B surface antigen. HbsAb is hepatitis B surface antibody. HbcAb is hepatitis B core antibody. Source: Dr. Tan

**Providers Skeptical About Honey for Cough Study Findings**

The public were agog over the new study suggesting that a teaspoon of honey helps a child with nighttime cold and cough, but the experts’ reaction was more nuanced and varied. Dr. Lawrence Rosen said that if he had not already known about the study, his patients would have made sure he heard about it.

The study, published in the December issue of the Archives of Pediatric and Adolescent Medicine, received tremendous attention from the public and the press when it was released.

A bedtime dose of buckwheat honey was shown to be more effective than the over-the-counter cough and cold medications currently on the market in children aged 2-17 who had upper respiratory infection (Arch. Pediatr. Adolesc. Med. 2007;161:1140-6).

The study came out shortly after a Food and Drug Administration advisory panel voted that over-the-counter cough and cold medications should not be recommended for children under age 5, and many major manufacturers voluntarily pulled their products from stores.

“What perfect timing,” said Dr. Rosen, a pediatrician who practices in Old Tappan, N.J., who is a member of the provisional section on complementary, holistic, and integrative medicine of the American Academy of Pediatrics. Dr. Rosen said he thought the study was well designed and compelling, and that he would recommend giving honey to children over 1 year of age. Parents “are just happy to know there are things that they can do,” he said. “They just want to be able to do something.”

Some other experts, however, do not have such a high regard for the findings. “I think it is reasonable to recommend honey for treatment in cough for children over 2 years old based on these results,” said Dr. James Taylor, a professor of pediatrics and teaches at the University of Washington, Seattle. “In my own practice I will probably not yet widely recommend honey because the benefits are relatively small, and the appropriate dose and form of honey use are not well standardized,” he said in an interview.

The mechanism of action involved with the honey treatment might only be its demulcent properties, said Dr. Taylor, who has an interest in complementary medicines. “If that is the case, any soothing cough drop might work equally well.”

Dr. Jo Ellen Hendley said he was not impressed with the study, but he probably would recommend honey to patients.

“It is not a knock your socks off kind of finding,” said Dr. Hendley, a professor of pediatrics and director of pediatric infectious diseases at the University of Virginia, Charlottesville, who has studied rhinovirus and colds since the 1960s.

The study used parental recall to measure cold improvement, rather than a more objective and definitive measure, noted Dr. Hendley. Moreover, all of the groups in the study had improvement in their cough, even those who were not treated.

Dr. Hendley said he does not recommend much for a cold since nothing has been shown to have a definitive benefit, but he would recommend honey. “I happen to like honey—the price is right. I can’t think of anything bad about having a 1-year-old use honey,” he added.