

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

HCV Diagnostic Tools: Grading & Staging a Liver Biopsy

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The liver biopsy is an important diagnostic tool because it is considered the most precise procedure we have today for evaluating the health of the liver by measuring the degree of liver inflammation and staging of fibrosis for predicting disease progression and treatment outcome.

The liver biopsy involves taking a very small specimen of liver tissue. The specimen is usually sent to a pathologist for evaluation. It is very important that this procedure and all lab tests are interpreted by a medical provider. With this in mind, the information below is provided to help people understand the grading and staging of a biopsy

Grading and Staging

There are a variety of ways to interpret a liver biopsy. The most common scoring methods include Metavir and the histologic activity index (HAI) also called the Knodell. It is important

to remember that the length of the liver specimen and the knowledge of the professional reading the biopsy can influence the interpretation of the report.

Metavir

The Metavir scoring system was specially designed to evaluate the liver in people with HCV. The scoring consists of using a grading and a staging system. The *grade* gives an indication of the activity or amount of inflammation and the *stage* represents the amount of fibrosis or scarring.

The grade is assigned a number based on the degree of inflammation, which is usually scored from 0-4 with 0 being no activity and 3 or 4 considered severe activity. The amount of inflammation is important because inflammation somewhat correlates with the development of fibrosis.

The fibrosis score is also assigned a number from 0-4:

- 0 = no scarring
- 1 = minimal scarring
- 2 = scarring has occurred and extends outside the areas in the liver that contains blood vessels
- 3=bridging fibrosis is spreading and connecting to other areas that contain fibrosis
- 4=cirrhosis or advanced scarring of the liver

Knodell

The Knodell score or histologic activity index (HAI) is also commonly used to stage liver disease. It is somewhat of a more complex process, but some experts believe that it is a better tool for defining the extent of liver inflammation and damage because it provides more information about various aspects of inflammation and scarring. It is composed of four individually assigned numbers that make up a single score. The first component (periportal and/or bridging necrosis) is scored 0-10. The next two components (intra-lobular degeneration and portal inflammation) are scored 0-4. The combination of these three markers indicates the amount of inflammation in the liver:

- 0 = no inflammation
- 1-4 = minimal inflammation
- 5-8 = mild inflammation
- 9-12 = moderate inflammation
- 13-18 = marked inflammation



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- Sexual Transmission
- Managing Side Effects
- Disclosure
- Getting Disability Benefits
- Personal Care
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- Reading a Lab Report: A Basic Primer
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- Liver Biopsy
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- Révélation
- Positif : Qu'arrive-t-il maintenant?
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- Cómo interpretar los resultados de una alalítica: guía básica
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The fourth component indicates the amount of scarring in the liver and is scored from 0 (no scarring) to 4 (extensive scarring or cirrhosis).

Information about the grade and stage of liver disease is helpful for the healthcare provider and the patient in guiding medical management. For example, treatment is usually indicated if the Metavir score is greater than or equal to 2 or the Ishak/Knodell score is greater than or equal to 3. It is important to know this information in order to help guide management and treatment of HCV. For example, if a medical provider is able to estimate the approximate time when someone became infected with HCV, the results of the biopsy will give an indication of the rate of disease progression:

- For people with moderate to severe liver damage it is generally recommended that a more aggressive treatment approach is warranted.
- For people with a milder form of liver disease a watch and wait approach is usually recommended.

However, given that people with milder liver disease respond better to current HCV therapies some experts believe that even people with milder forms of HCV liver disease should be treated.

Sound confusing? Probably the best advice is to work closely with your medical provider to find out whether treatment is needed or not!

For more information about hepatitis C, hepatitis B and HCV coinfections, please visit www.hcvadvocate.org.

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