

# Hep C Factsheets

## Liver biopsy / fibroscan



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**Can't you get enough information from blood tests?**

When a person might have liver disease their doctor will use a variety of means to determine the level of possible disease. These methods include assessing the severity of symptoms, blood tests, ultrasound (or other x-rays of the liver) and liver biopsy. Each of these provides different information. Together, they can be used to evaluate the impact of hep C on a person's health, the risk of complications in the future and to optimise management of their illness.

A person's symptoms are important because they indicate how the hep C is affecting their life. However there is little correlation between the severity of symptoms and the extent of liver damage.

One of the main blood tests performed is an ALT measurement; however, the ALT level is an indirect measure of liver injury and doesn't always reflect

what is happening in the liver. Most importantly, the ALT level cannot indicate if a patient has cirrhosis or not. Some people can develop significant liver damage even though their ALT is in the normal range - however this is less common than when liver damage coincides with elevated ALT levels.

Ultrasound and other X-rays can indicate if there is a blockage of blood vessels to or from the liver, if there is an unusual mass in the liver such as a tumour, and can suggest that a patient might have advanced cirrhosis - however, the 'might' must be stressed.

One of the problems with these X-ray techniques is that they have difficulty distinguishing cirrhosis from other conditions such as fat accumulation in the liver. This is particularly true in early cirrhosis, before scar tissue has affected the outline of the liver and blood flow in the main vein that carries blood from the intestine to the liver. The diagnosis of cirrhosis can only really be made by liver biopsy.

**Why is cirrhosis important?**

Because the diagnosis of cirrhosis has implications for a person's future health.

Cirrhosis can be caused by many different liver diseases, however in Australia the most common causes are excess alcohol and hep C infection. A diagnosis of cirrhosis means that liver injury has lead to the build up of fibrous scar tissue in the liver to such an extent that the microscopic structure or "architecture" is affected. This scar tissue affects the blood flow through the liver and the function of the cells in the liver. Because the scar tissue affects the microscopic structure of the liver it, can only really be diagnosed by looking at a tiny piece of liver tissue down the microscope.

It has been estimated that between 10% and 20% of people with HCV and ongoing significant hepatitis may develop cirrhosis after 20 to 30 years of infection. A diagnosis of cirrhosis is an important event for people because it means that they are now at increased risk of developing liver failure, primary liver cancer and other complications of cirrhosis. Because of the increased risk of these

complications, people with cirrhosis may undergo testing and increased surveillance for these complications, so that hopefully they can be treated before they become life-threatening.

The presence or absence of cirrhosis is only part of the information available from liver biopsy. Apart from showing the amount of scar tissue (an indication of what has happened to the liver in the past), liver biopsies also show how active the hep C is now, and if there are other factors interacting with the hep C to damage the liver. These other factors include things like excess alcohol, iron accumulation in the liver or evidence that the body's own immune system is attacking liver cells (autoimmune disease).

## **A pleasant surprise?**

A liver biopsy could also be considered for reassurance of a person's prognosis. As mentioned above, progression to cirrhosis is not by any means inevitable and a biopsy after 20-30 years of infection may only show mild changes. Such a finding can usually be reassuring to a person as it is likely (though not proven) that such people have 'selected themselves out' and may be in a sub-group that may never progress to serious liver damage. A biopsy for these reasons should really only be done if someone is anxious and fully aware of the issues discussed above and below.

## **Is biopsy an accurate guide to what is happening in the whole liver?**

A liver biopsy sample is only a tiny bit of the liver but tissue taken in a liver biopsy is representative of changes throughout the liver due to hep C. Hep C affects the whole liver and although there may be some variation within the liver, this would be a minor rather than major variation.

## **Is a liver biopsy painful?**

There are actually several different types of liver biopsy, but the type most people have is called a percutaneous needle liver biopsy. 'Percutaneous' means it is performed through the skin, usually

between the ribs on the right side of the abdomen. 'Needle' describes the biopsy device and although there are several types, they are all basically needles.

Local anaesthetic is used to numb the skin and liver prior to the biopsy. Injecting the local anaesthetic can take a couple of minutes or longer. Some doctors also give an intravenous injection to help patients relax. The actual biopsy usually takes about one second. People usually remain at hospital after the biopsy for at least six hours or even overnight.

It is not usually painful at the time of the biopsy although some people do have a sensation of pressure in their abdomen. About one in ten people will have significant pain after the procedure for which pain relief medication may be needed. The pain usually only lasts 20 to 30 minutes and responds to the injection.

## **Is a liver biopsy dangerous?**

About 1 in every 300 people who have a liver biopsy could have a serious complication such as bleeding from the surface of the liver. This would usually mean staying in hospital for a day or two and may require an operation, although this is rare.

About 1 in every 1000 people who have a liver biopsy could die from it. So yes, there are risks with a liver biopsy but these risks need to be balanced against the benefits of more precise knowledge of what is happening in the liver.

Liver biopsies are not recommended lightly. Because of the relatively low, but none the less real risk associated, the final decision to proceed with biopsy should be made by the individual person.

## **How does my doctor make sense of my biopsy result?**

A doctor will usually explore two major issues in looking at the liver biopsy:

Firstly, are the features consistent with HCV as the cause of the liver test abnormalities? ie. are there other pathologies present?

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Secondly, if the biopsy is consistent or diagnostic of HCV, then how badly is the liver damaged? This can be estimated by studying three main parameters:

- the amount of portal inflammation - which is the inflammation around liver cells, bile ducts and veins in parts of the liver.
- the amount of lobular inflammation - which is the amount of inflammation in the liver lobule itself.
- the amount of fibrosis - which is an early stage in the development of liver cell scarring (cirrhosis).

These three features may be given scores of 0-4, where 4 is the worst scenario. Thus the overall biopsy may be scored out of 12. The first two (inflammation) are often called the grade of HCV whilst fibrosis may be referred to as the stage of HCV.

It is the latter that can give an idea to the chances of progression to cirrhosis over the next 10 years or so. Stage 4 hep C (a fibrosis score of 4) is already cirrhosis, whilst a stage of 1 may only progress to stage 2 over 10-20 years.

Other aspects of the biopsy such as fat and biliary inflammation are only sometimes present and do not seem to influence disease outlook.

### Liver biopsy no longer a general requirement for treatment

From 1 April 2006, a biopsy examination is no longer a mandatory pre-treatment test for people wanting to access government subsidised \$100 hep C drug treatment.

Note that some people with genotype 2 or 3 may still require biopsy to determine whether they have cirrhosis or bridging fibrosis - which would have an impact on treatment monitoring.

### Fibroscan

Fibroscan is a new device (like an ultrasound) that assesses the degree of liver damage, in particular, fibrosis, through a measurement of liver stiffness — the stiffer the liver, the more likely that fibrosis (scarring) exists.

It is believed that Fibroscan will become a standard monitoring tool for hep C as a series of Fibroscans can show the increase, decrease or plateauing of a person's liver fibrosis.

### Also see

- I Have Hep C: what could happen to me?* (booklet)
- Treatment overview* (factsheet)
- What You Need To Know: a plain-English guide to hepatitis C* (booklet)

- Abridged with assistance of Professor Geoff McCaughan from an original article by Professor Graeme Macdonald in *Hep C News* - the regular newsletter of the Hep C Council of QLD (07 3229 9238). Graeme Macdonald is a consultant gastroenterologist at the Royal Brisbane Hospital. Geoff McCaughan is Director of the AW Morrow Liver Centre and Physician in Charge at the Australian National Liver Transplant Unit.

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*Hep C Helpline* and *HepConnect* (peer support): 02 9332 1599 / 1800 803 990

Web info: [www.hepatitisc.org.au](http://www.hepatitisc.org.au) Web peer support: [www.hepcaustralasia.org](http://www.hepcaustralasia.org)

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