An in-depth look at the FibroScan

What is a FibroScan?

A FibroScan is a tool that looks at the health of the liver. It measures how stiff the liver tissue is – the stiffer the liver, the more liver damage there is. If the FibroScan shows there is liver damage, there are things that can be done to reduce further damage and improve liver health.

The FibroScan is relatively new technology that requires specially trained staff to operate the machine, therefore not every region in New Zealand has a FibroScan machine at present. Northland, Auckland, Waikato, Christchurch and Dunedin regions have a FibroScan based in their hospitals. The Hepatitis Foundation owns three portable FibroScan machines that are currently used in community clinics in Northland, Wellington, Hutt, Wairarapa and the Bay of Plenty.

How does the FibroScan work?

The FibroScan machine uses a transient elastography technique to send vibration waves through the liver. The machine measures how long it takes for the wave to travel through the liver. These waves, created by the FibroScan machine, measure the firmness of the liver.

The 'waves' travel quicker through firm liver tissue.

The FibroScan result is measured in kilopascals (kPa). The higher the number of kPa, the stiffer the liver, and this means more liver damage is present.

What does a FibroScan assessment involve?

A FibroScan assessment is similar to an ultrasound and is painless. You will only feel a slight vibration on your skin at the tip of the probe. The FibroScan has no side-effects or complications and there will be no need for pain relief.

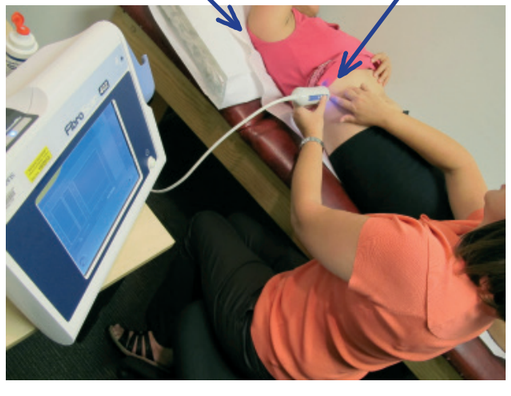
Depending on the region, the FibroScan assessment will either take place in a hospital or community clinic. You can eat and drink as normal before having a FibroScan. You will lie on your back with your right arm raised above your head (1). A gel is put on your skin before the probe is placed above the location of the liver. The probe generates a pulse, which sends waves to the liver, measuring liver stiffness (2). Multiple readings are taken. Once the procedure has been completed, the machine will take an average of the readings.

Most FibroScan assessments take between 10 and 15 minutes. After the FibroScan, the operator will speak to you about your liver and the FibroScan results.

There is no need to rest after a FibroScan or take time off work following a FibroScan. You may continue with your normal daily activities.

1 Right arm raised above head.

2 The probe is placed on the skin above where the liver is located.



What are the results and what do they mean?

Once the scan has been successfully completed, you will be given the result immediately.

You will be provided with one of the following results:

Normal liver / no fibrosis (<5 kPa)	You have a healthy liver with no inflammation or scarring.
Mild fibrosis (5 - 7.1 kPa)	You have a small amount of scarring on the liver.
Moderate fibrosis (7.2 - 9.5 kPa)	You have a fair amount of scarring on the liver.
Severe fibrosis (9.6 - 12.5 kPa)	You have a large amount of scarring on the liver. You will need further review and tests at the hospital.
Cirrhosis (>12.5 kPa)	Your liver is very scarred, which may cause your overall health to deteriorate. You will need further tests at the hospital.

Your FibroScan operator will provide you with more information about the best plan of care for you. The FibroScan assessment will be repeated yearly or once every three years. This is dependent on the previous FibroScan results.

The history of the FibroScan

In 2005 a French company, Echosens, commercialised the FibroScan machine. The FibroScan was approved for use in 2006 by the French National Authority for Health (HAS). Seven years later, in 2013, it was approved for use in America by the FDA (U.S. Food and Drug Administration).

The FibroScan measures a liver volume up to 200 times larger than a liver biopsy

The FibroScan, in many cases, removes the need for a liver biopsy. Many people with chronic hepatitis C are nervous about having a liver biopsy as this procedure is often painful and there are risks involved. A liver biopsy is a test where a sample of liver tissue is removed with a needle or through surgery. This liver sample is examined to determine the level of liver damage.

The Hepatitis Foundation purchased its first portable FibroScan in 2012 and has so far completed over 1000 FibroScan assessments.

The FibroScan probe – this probe is placed on top of the skin.