



# ultrasound dimensions

Introducing  
for  
The First Time  
in Noida

**ULTRASOUND  
LIVER  
ELASTOGRAPHY**



**Samsung RS85  
Premium Ultrasound System**

**Patient/Doctor  
Information  
Leaflet**

The most advanced  
Ultrasound - Doppler Clinic in Noida

[www.ultrasounddimensions.in](http://www.ultrasounddimensions.in)  
[ultrasound.dimensions@gmail.com](mailto:ultrasound.dimensions@gmail.com)  
0120-3735777, 4545747, 9313138490

# Having an Ultrasound Elastography (Fibroscan)

If your doctor suspects that you may have damage to your liver, they may recommend that you have a Ultrasound Elastography. This factsheet explains what this involves.

## What is Ultrasound Elastography?

It is a scan similar to a routine abdomen ultrasound which will measure how elastic (or how stiff) your liver is. A healthy liver should be soft and elastic, and if your liver is stiff this is a sign that some damage (fibrosis/inflammation) has occurred.

## How is it done?

It is a painless procedure which involves a probe being placed over the top right area of your stomach. Like an abdominal ultrasound, this will also require 4 hours of fasting.

## What are the benefits?

Ultrasound Elastography is a quick, painless test that gives immediate results. It does not have any potential complications or risks and is non-invasive, which means that it does not break the skin or enter your body.

The results of the scan can help your doctor find out about the level of damage that affects your liver, and decide what treatment you might need.

It is helpful for measuring the degree of liver damage in people with:

- Viral hepatitis B and C
- Alcoholic liver disease
- Non-alcoholic fatty liver disease
- Hepatitis C and HIV co-infection
- Haemochromatosis (iron overload disorder)
- Other liver diseases

### **What are the risks?**

There are no risks involved. It is painless and not invasive (meaning it's not carried out inside your body and does not break the skin).

### **What if I choose not to have Ultrasound Elastography?**

If you don't have the scan it will be more difficult for your doctor to accurately diagnose the condition of your liver and to decide the best treatment for you. This could mean that eventually your liver will become seriously damaged.

### **Are there any alternatives to this method?**

The other ways of checking the damage to your liver, apart from blood tests in an MRI (which is more expensive) and Liver Biopsy, which is an invasive test (using a needle, a small tissue sample is taken from the liver) with risk of many complications. The other problem with liver biopsy is that it samples only a very small tissue of the liver, while elastography along with ultrasound can look at a larger area of the liver.

**This information sheet has been given to you to explain what Ultrasound Elastography involves and why it is being recommended for you. If you have any questions or concerns, please do not hesitate to speak to a doctor caring for you.**

### **Other facilities available at our clinic-**

- Abdominal Ultrasound
- Abdominal Colour Doppler
- Small parts Ultrasound with Elastography and Doppler
- Advanced 3D-4D Obstetric and Gynae Scans
- Limb and neck Dopplers





# Information for Doctors

Hepatology Snapshot:

## Different techniques for ultrasound liver elastography

JOURNAL OF HEPATOLOGY

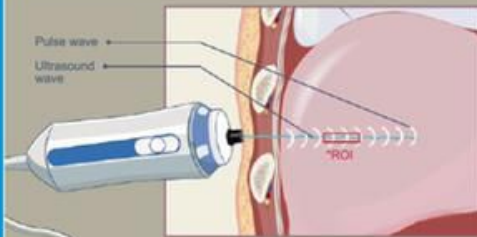
Lorenzo Mulazzani<sup>1</sup>, Vito Cantisani<sup>2</sup>, Fabio Piscaglia<sup>3\*</sup>

<sup>1</sup>Unit of Internal Medicine, Department of Medical and Surgical Sciences, University of Bologna, S.Orsola-Malpighi Hospital, Bologna, Italy

<sup>2</sup>Department of Radiological Sciences, Policlinico Umberto I, University Sapienza, Rome, Italy

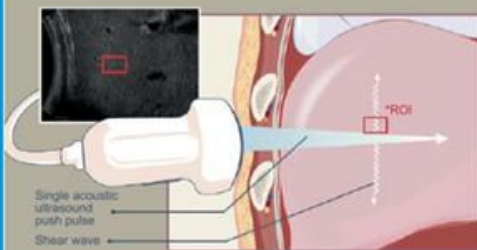
\*Corresponding author. E-mail: fabio.piscaglia@unibo.it

### TRANSIENT ELASTOGRAPHY



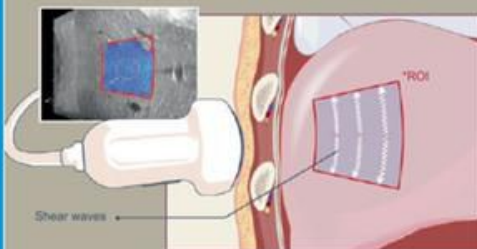
Compression push deformation (hemispherical waves) travels longitudinally through the liver. Ultrasound measures (→) its travelling speed.

### pSWE



\*Selected small (10x5 mm) region of interest (ROI). ROI can be freely moved anywhere in the scanning plane up to 8 cm in depth to capture shear wave speed.

### 2D SWE



Geometrical box as ROI (1-4 cm) to measure tissue stiffness by assessing shear waves speeds generated by multiple stimulating ultrasound beams (specific method depending on the proprietary technology).

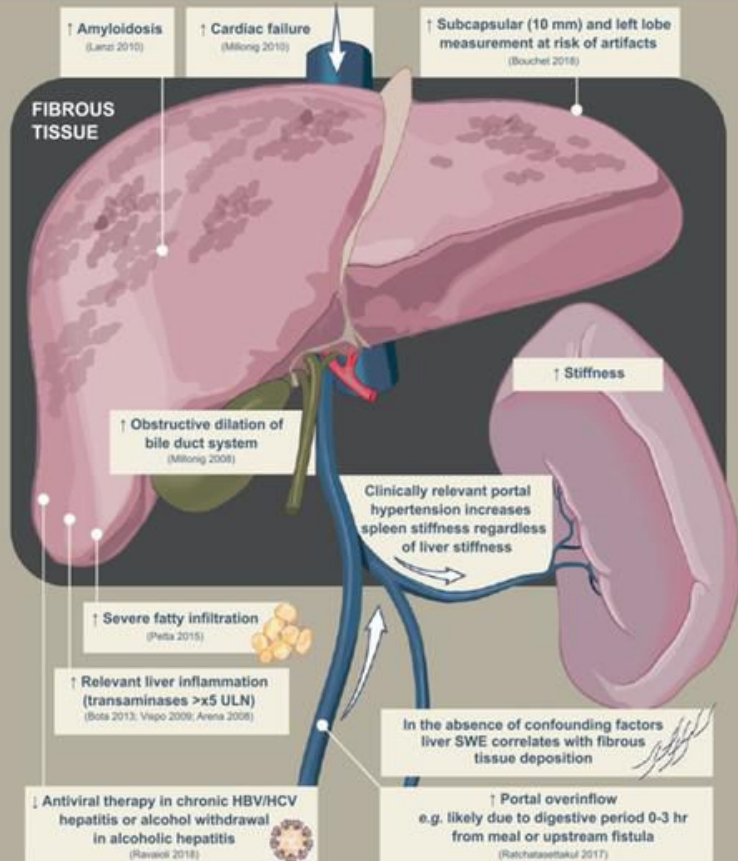
They can work as one time emitted push pulse or in real time based on the proprietary technology.

### SWE MEASUREMENTS

- 0-5 kPa no significant fibrosis (regardless of the machine).
- Range from 5-6 to 13-17 kPa includes thresholds to distinguish different fibrosis stages (F2-F3-F4). Precise threshold depends on specific technologies/manufacturers and liver disease etiology.
- >13-17 kPa suggests established cirrhosis, with progressive higher values associated to higher risk of more significant prognostic events. Please note that cirrhosis might already be present also at lower stiffness thresholds, depending on the specific machine model.



### CONFOUNDING FACTORS IN THE ASSESSMENT OF LIVER FIBROSIS BY ELASTOGRAPHY (↑↓ INCREASE/DECREASE IN LIVER STIFFNESS)



Keywords: Elastography; liver stiffness; liver fibrosis; portal hypertension; ultrasound.

Received 23 August 2018; received in revised form 4 October 2018; accepted 18 October 2018

Journal of Hepatology 2019 vol. 70 | 545-547