

Fig. 1

## Causes of liver diseases

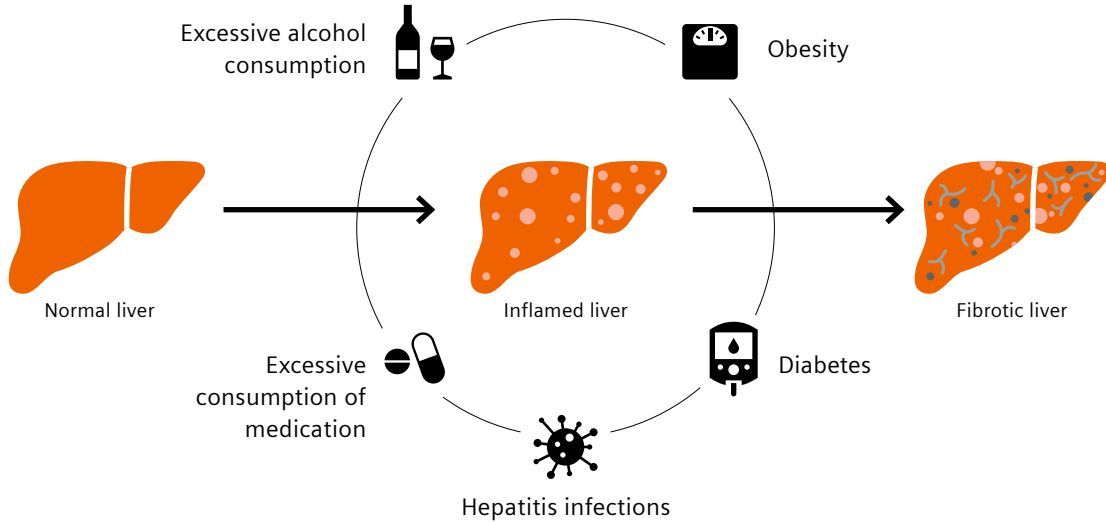


Fig.2



Normal liver

Inflamed liver

Fibrotic liver

Hepatic lobules are small structural units composed of liver cells (hepatocytes).



### Lobular structure of the liver

The liver contains an estimated 1 to 1.5 million hepatic lobules with a diameter of 1–2 mm.

### Formation of collagenous connective tissue

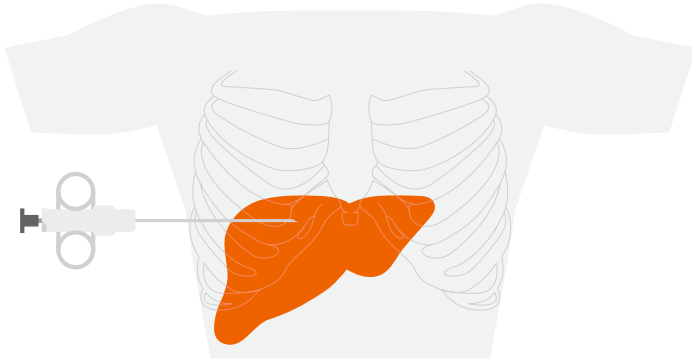
If liver cells are chronically damaged – for example, by a prolonged inflammation – excessive collagenous connective tissue accumulates.

### Hardening of the liver

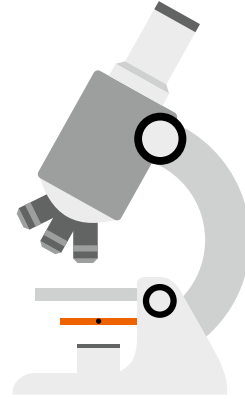
The connective tissue gradually replaces the actual liver cells. The organ becomes scarred and loses its elasticity and function.

Fig. 3a

## How diagnosis works: biopsy



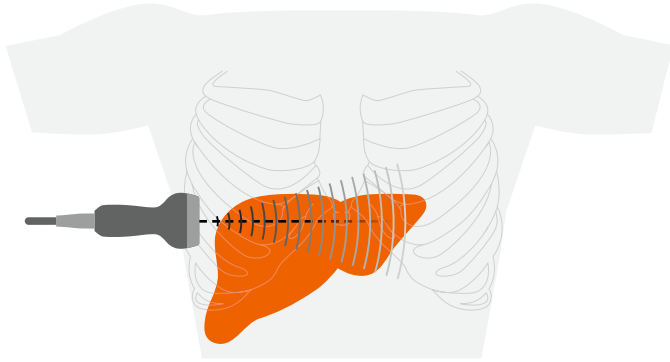
A tissue sample is taken from the liver with a cannula.



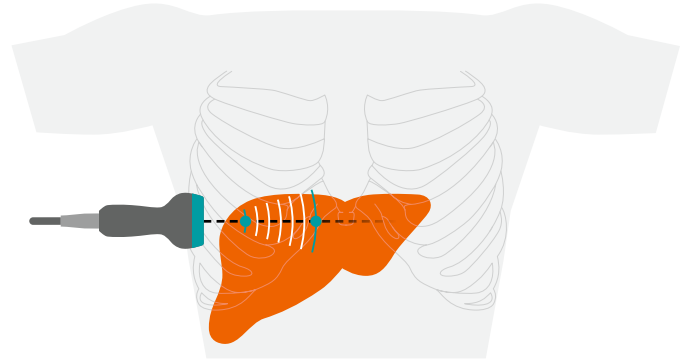
The sample is then examined for scar tissue under a microscope.

Fig. 3b

## How diagnosis works: elastography



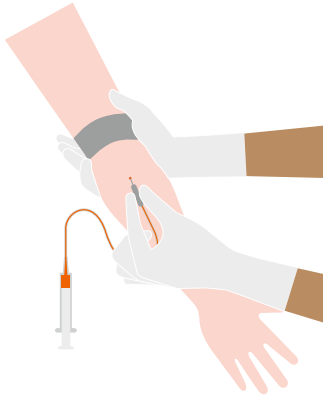
An ultrasound transducer emits an (acoustic radiation force impulse) ARFI push pulse.



Shear waves are generated from the ARFI push pulse and propagate through the liver. The less elastic the liver tissue, the faster the shear waves travel through the liver.

Fig. 3c

## How diagnosis works: biomarker test



A blood sample is taken.



Three important serum markers can be detected with an automated analyzer, and the severity of the liver fibrosis can be derived from these.