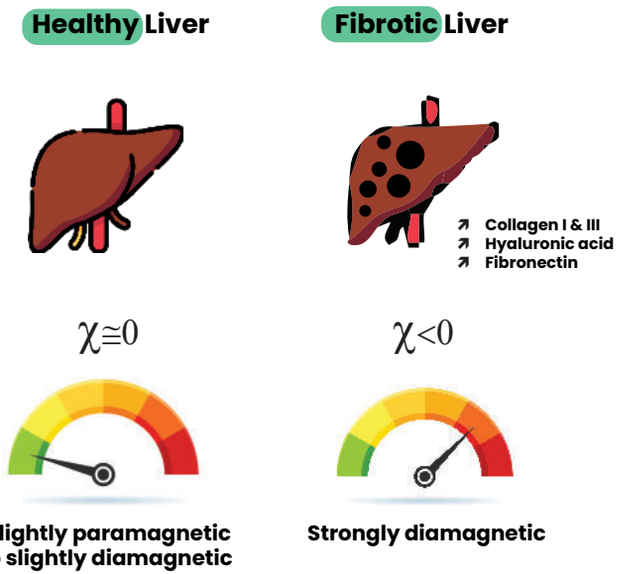
What is χ ?

This MRI-based technology evaluates local magnetic field distortions to characterize local tissue properties in the liver. Each tissue has intrinsic magnetic properties that are different from one tissue to another. A tissue can be, to different extent, either diamagnetic, paramagnetic or ferromagnetic, leading to variations of local magnetic susceptibility.

For instance, liver fibrosis is characterized by the presence of Collagen type I & III in the extracellular matrix. This collagen is strongly diamagnetic leading to negative χ values while healthy liver tissues are slightly paramagnetic leading to positive QMS values. (figure 1)

Figure 1: Liver χ values after compensation for fat and iron confounding effects



SoQut imaging

SoQut imaging

ELiBio®

Digital Liver Biopsy

SoQut Imaging revolutionize diagnosis and management of **M**etabolic **A**ssociated **S**teatosis **H**epatitis (MASH) through innovative, non-invasive MRI software-based technology.

Turn your MRI into a biopsy

www.SoQut-Imaging.com

ELiBio®

Digital Liver Biopsy

Your All-in-one software solution for MALFD/MASH patient management

ELiBio® is an advanced MRI-based imaging software allowing **quantitative liver biomarkers** assessment such as Fat and iron contents.
Most importantly, thanks to our unique quantitative **magnetic susceptibility** (χ - CHI) mapping technology, we can assess the presence and severity of **liver fibrosis.**

- **Compatible with most clinical MRI device (1.5T, 3T)**
- **Quantitative metrics:** Fat (%), Iron (mg/g), fibrosis (χ in ppm), visceral fat (%), lean mass (%) & subcutaneous fat (%)
- **3D mappings**
- **Whole liver** & spatial heterogeneity assessments
- **Smooth integration into radiological workflow: 20s, breath-holding modified mGRE T1 sequence**
- **Time-to-result : < 10 mins**

Clinical Case

· Men, 66 yrs, overweight, type II diabetes and controlled hypertension.

· Cytolysis since 1996, following HBV vaccination. Cytolysis peaks occurred several times, with progressive normalization each time

Clinical analysis

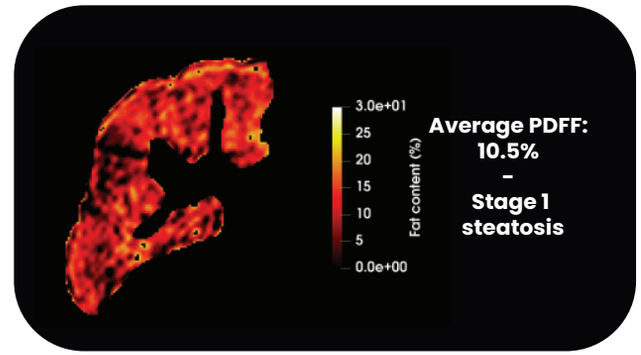
· Fibroscan®* LSM suggesting liver cirrhosis (14.4kPa-M probe, IQR/med 14%)

· MRI (without ELiBio) showed cirrhotic-type liver dysmorphism, with diffuse steatosis overload.

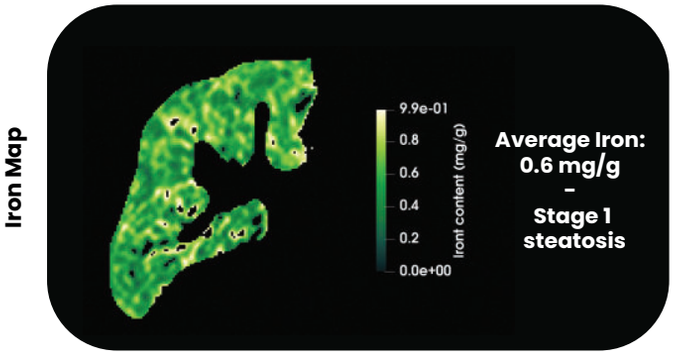
· The biopsy showed no fibrosis (SAF S2 A3 F0/1c)

ELiBio analysis

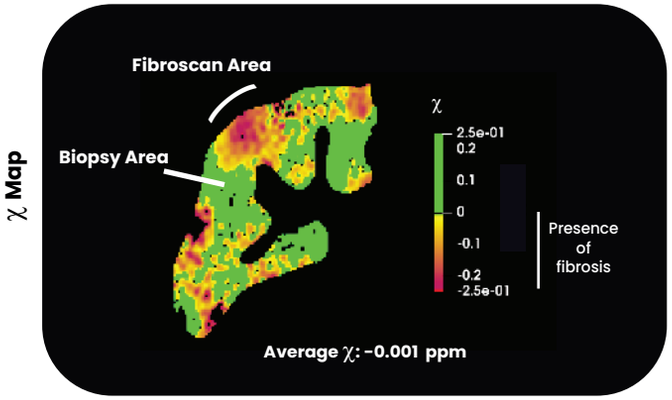
Fat Map



Iron Map



χ Map



This patient Fibroscan and biopsy results are contradictory.

Using ELiBio, the patient has an average magnetic susceptibility representative of a healthy liver but with a strong spatial heterogeneity.

ELiBio Chi mapping highlights focal areas of fibrosis at the junction of the right & left lobes and in the anterior part of the left lobe.

Both Fibroscan and biopsy analysis were true and are confirmed by ELiBio analysis.

* Fibroscan® is a trademark of Echosens