Beyond the Biopsy<sup>™</sup> is the Global Liver Institute's new awareness campaign, dedicated to accelerating the acceptance and adoption of noninvasive technologies as an alternative to biopsy.

# As many as 1 in 4 people already has NAFLD or NASH

"The biopsy was very frightening. It's degrading using bedpans, and horrendous lying motionless for hours afterwards. I have since had more biopsies, each one equally painful and traumatic - meaning time off from work for my husband or daughter."

#### Jenny

Liver transplant recipient who has undergone multiple biopsies

## Liver biopsy

Liver biopsy is an invasive diagnostic procedure, long considered the gold standard for diagnosing liver disease such as Non-Alcoholic Fatty Liver Disease (NAFLD) or Non-Alcoholic Steatohepatitis (NASH), despite limitations of sampling errors and patient burdens of cost, time, and risk.

## Risks of liver biopsy

The complication rate of liver biopsy is 1 in 1,000 patients. Severe bleeding occurs in 1 in 2,500 to 10,000 patients. Death occurs in approximately 1 in 10,000 patients and is usually related to aggressive hemorrhage.

#### Complications of liver biopsy

- Bleeding
- Death
- Pneumothorax
- Hemothorax
- · Perforation of viscous organs
- Inadvertent biopsy of the kidney
- · Bile peritonitis
- Infection (bacteremia, abscess, sepsis)
- Hemobilia

Because it is a painful, invasive procedure, liver biopsy should be a diagnostic of last resort. Annually 60,000 biopsies are performed for 64 million patients with NAFLD in the US. This contributes to NAFLD and NASH being underdiagnosed and underreported. Patients need alternatives to increase the number of diagnoses and reduce the number of biopsies.

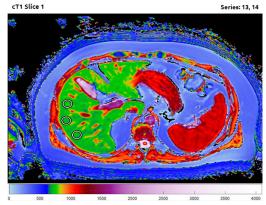


Image of a liver from a multiparametric MRI

## Non-invasive technologies do exist

These technologies offer a less expensive and potentially more accurate method of diagnosing and staging liver disease. They assess the amount of fat in the liver, liver stiffness, and level of disease.

#### Non-invasive technologies include:

- LiverMultiScan® (multiparametric Magnetic Resonance Imaging, or mpMRI)
- FibroScan®
- Ultrasound
- Elastography
- Serum markers

Unfortunately, because of regulatory pressure, health system procurement processes, and clinical inertia, acceptance and adoption of some of these technologies may be a decade away.

But we don't have to wait ten years or more for non-invasive alternatives to biopsy. As the leading patient-led liver health nonprofit organization in the world, the Global Liver Institute (GLI) is determined to speed up that timeline. Learn more about Beyond the Biopsy™ by contacting beyond@globalliver.org.

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