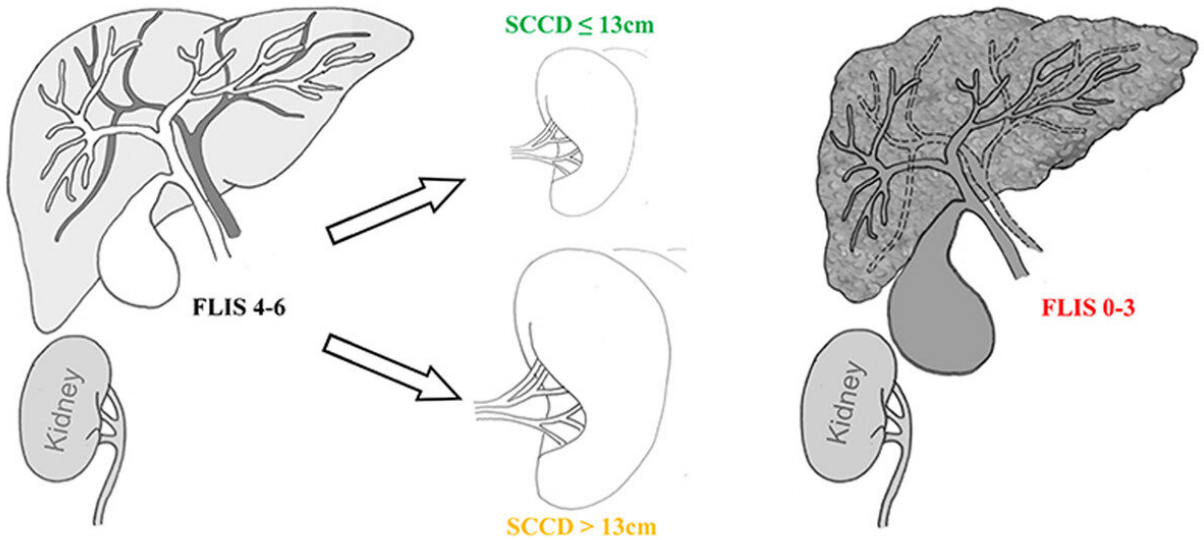


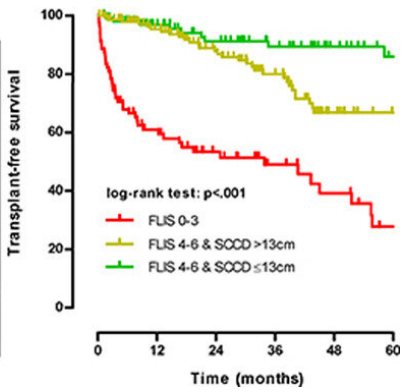
New non-invasive method of risk assessment in liver disease

May 19 2022, by Johannes Angerer

FLIS = liver enhancement + biliary excretion + portal vein signal
MRI at 20 minutes after gadoxetic acid injection



	cACLD	dACLD	ACLD
	Decompensation	ACLF	Mortality
FLIS 0-3	HR: 3.16	HR: 5.77	HR: 8.54
SCCD > 13cm			HR: 2.24
FLIS 4-6	HR: 1.0	HR: 1.0	HR: 1.0
SCCD ≤ 13cm			



Graphical abstract. Credit: *Journal of Hepatology* (2022). DOI: 10.1016/j.jhep.2022.04.032

In a recent study, an interdisciplinary research team from MedUni Vienna showed that functional magnetic resonance imaging (fMRI) can be used as a non-invasive method for predicting complications in chronic liver disease. The scientists combined a simple risk stratification system developed at MedUni Vienna—the functional liver imaging score (FLIS)—with splenic diameter. This new non-invasive method can be used to complement invasive investigations. The study results were recently published in the renowned *Journal of Hepatology*.

For their study, the multidisciplinary group of researchers from the Department of Biomedical Imaging and Image-guided Therapy and the Department of Medicine III at MedUni Vienna analyzed patients from the liver cirrhosis outpatient clinic at University Hospital Vienna. The functional liver imaging score (FLIS) developed at MedUni Vienna was confirmed to be extremely useful as a supplement to and/or replacement for existing invasive procedures for estimating severity and mortality risk. In the recent study, the scientists combined FLIS and splenic diameter for the first time to refine the new non-invasive method. This combination provided them with complementary data for [risk assessment](#) in patients with advanced [chronic liver disease](#).

Splenic diameter as a risk marker

FLIS is assessed by [functional magnetic resonance](#) imaging (fMRI) using a liver-specific contrast agent and is plotted on a scale of 0 to 6 points. The study found that patients with advanced liver disease and a low FLIS (0–3 points) or a high FLIS (4–6 points) but a large spleen (>13cm diameter) had a 3.2-fold increased risk of liver-associated complications compared with patients with a high FLIS (4–6 points) and small spleen (≤13cm). Furthermore, irrespective of spleen size, patients with a low FLIS (0–3 points) had an 8.5-fold increased risk of death compared with

those with a high FLIS (4–6 points) and small spleen (≤ 13 cm).

With the combination of FLIS and spleen size, the researchers addressed the fact, long known in medicine, that patients with chronic liver disease often have [high blood pressure](#) in the [circulatory system](#) upstream of the liver (portal hypertension). This promotes the development of complications and leads to enlargement of the spleen: the more severe the liver disease, the more pronounced the [portal hypertension](#)—and the larger the spleen.

The findings from the study will now be confirmed by multicenter clinical trials, i.e. [clinical trials](#) conducted in parallel at different institutions. As the authors of the current analysis, Nina Bastati and Lucian Beer from the MedUni Vienna's Department of Biomedical Imaging and Image-guided Therapy, point out, fMRI using liver-specific contrast agent and spleen size can already be applied in clinical practice.

More information: Nina Bastati et al, Gadoteric Acid-enhanced MRI-derived Functional Liver Imaging Score (FLIS) and Spleen Diameter Predict Outcomes in ACLD, *Journal of Hepatology* (2022). [DOI: 10.1016/j.jhep.2022.04.032](#)

Provided by Medical University of Vienna

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