

# Study confirms accuracy of transient elastography in NAFLD

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Researchers from France and Hong Kong determined that transient elastography (TE), a noninvasive, ultrasonic imaging modality, can be accurately performed in the majority of patients with nonalcoholic fatty liver disease (NAFLD) to exclude advanced fibrosis. Full findings of this study, funded by the Chinese University of Hong Kong, appear in the February issue of *Hepatology*, a journal published by Wiley-Blackwell on behalf of the American Association for the Study of Liver Diseases.

NAFLD is the most common cause of liver disease worldwide. Determining a prognosis for this condition is difficult, as there are no clear predictors of whether NAFLD will progress to nonalcoholic steatohepatitis (NASH), which can lead to [cirrhosis](#) and other complications.

Liver biopsy is the standard for diagnosing NASH and fibrosis, but this procedure can be risky and samples only a small percentage of liver tissue. According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH), biopsy carries a small risk of hemorrhage, puncture of other [internal organs](#), infection, and spread of [cancer cells](#). Transvenous liver biopsy carries an additional risk of adverse reaction to the contrast material.

To meet the urgent need for noninvasive alternatives to liver biopsy, a research team led by Victor de Lédinghen, M.D., Ph.D., conducted an evaluation of the accuracy of TE and biochemical tests for the diagnosis

of fibrosis and cirrhosis in NAFLD patients. "Transient elastography by Fibroscan is a non-invasive method for the diagnosis of liver fibrosis...Nevertheless, NAFLD patients are underrepresented in previous validation studies," explains Dr. de Lédinghen. The team also examined liver stiffness in association with hepatic steatosis, inflammation, and obesity, and set out to identify factors associated with discordance between liver stiffness measurements (LSM) and histology.

The research team evaluated 246 patients from two ethnic groups from two hospitals in France and Hong Kong with valid LSM acquisitions and satisfactory liver biopsy specimens. Men who consumed more than 30 g of alcohol per week and women who consumed more than 20 g of alcohol per week were excluded. Patients with secondary causes of hepatic steatosis (e.g. chronic use of systemic corticosteroids), positive hepatitis B surface antigen or anti-hepatitis C virus antibody, or histologic evidence of other concomitant chronic liver diseases were also excluded. Since the aim of transient elastography was to diagnose significant fibrosis and early cirrhosis, patients with clinical and radiological evidence of cirrhosis were excluded.

Researchers found that successful measurement could be obtained in over 97% of patients with BMI below 30 kg/m<sup>2</sup> and 75% of obese patients. LSM was not affected by hepatic steatosis, necroinflammation and obesity. Most discordance between TE and histology occurred in patients with short liver biopsy lengths and mild or no fibrosis. In addition, TE had superior performance to other non-invasive biochemical tests in diagnosing advanced fibrosis and cirrhosis.

"The adoption of transient elastography could potentially spare two-thirds of NAFLD patients from liver biopsies. Since the prevalence of NAFLD is high in many affluent countries, this approach would be cost saving," speculates Dr. de Lédinghen.

Dr. de Lédinghen also cautions that while TE has a high negative predictive value, the positive predictive value of TE and other noninvasive tests to diagnose advanced fibrosis in NAFLD patients remains modest. He states, "The main value of these tests is to exclude advanced fibrosis as screening tests. Based on our data, it is reasonable to consider [liver biopsy](#) in patients whose LSM is 7.9 kPa or above."

Leon Adams, associate professor at the University of Western Australian and author of this month's editorial, agrees, stating, "de Lédinghen et al have provided valuable data regarding the use of TE in NAFLD patients. Its strength appears to be excluding advanced [fibrosis](#) and cirrhosis, however there are a number of issues that need to be clarified before it is routinely utilized in the clinical setting." Professor Adams points out issues in successfully conducting TE evaluations on obese patients, varying results due to diverse patient populations, and the fact that cost and availability may play a role in the decision to employ TE and other noninvasive tests in the future.

**More information:**

Article: "Diagnosis of Fibrosis and Cirrhosis Using Liver Stiffness Measurement in Nonalcoholic Fatty Liver Disease." Vincent Wai-Sun Wong, Julien Vergniol, Grace Lai-Hung Wong, Juliette Foucher, Henry Lik-Yuen Chan, Brigitte Le Bail, Paul Cheung-Lung Choi, Mathurin Kowo, Anthony Wing-Hung Chan, Wassil Merrouche, Joseph Jao-Yiu Sung, Victor de Lédinghen. *Hepatology*; Published Online: January 27, 2010 ([DOI: 10.1002/hep.23312](https://doi.org/10.1002/hep.23312)); Print Issue Date: February 2010.

Editorial: "Transient Elastography in NAFLD: Making Sense of Ec[DOI: 10.1002/hep.23422](#)tology; Published Online: January 27, 2010 ([DOI: 10.1002/hep.23422](https://doi.org/10.1002/hep.23422)); Print Issue Date: February 2010.

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