



Blood Proteins Can Predict Fatty Liver Disease Up to 16 Years Before Symptoms

Many people do not find out they are at risk for MASLD before they are diagnosed and coping with symptoms.

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Scientists have identified five specific blood proteins that can accurately predict a person's risk for developing a serious form of liver disease as early as 16 years before they experience symptoms, enabling early intervention and possible prevention and treatment, according to a study [presented] at [Digestive Disease Week \(DDW 2025\)](#).

The findings address metabolic dysfunction-associated steatotic liver disease (MASLD), which has become the most common form of liver disease worldwide and is continuing to increase. People with MASLD face up to twice the mortality rate of those without the disease.

“Imagine if we could predict risk of MASLD years before it starts,” said Shiyi Yu, MD, resident physician in the department of gastroenterology, Guangdong Provincial People's Hospital in China. “Too often, people do not find out they are at risk for liver disease before they are diagnosed and coping with symptoms. The field urgently needs effective biomarkers and predictive models, and our research shows that plasma proteins offer novel potential strategies for early prediction and intervention.”

Researchers analyzed blood samples from more than 50,000 participants in the UK Biobank. They followed their health records for more than 16 years, identifying levels and combinations of proteins in the blood associated with developing liver disease later in life.

Screening more than 2,700 proteins, they found five — CDHR2, FUOM, KRT18, ACY1, and GGT1 — that appear to be early warning signals for MASLD. The combined levels of these five proteins achieved 83.8% accuracy at predicting disease five years from onset and 75.6% accuracy at predicting 16 years ahead of diagnosis. Adding clinical biomarkers such as body mass index and daily exercise amount to the protein levels achieved even greater accuracy of 90.4% at five years and 82.2% at 16 years.

“We achieved similar results when we tested this predictive model in a separate cohort of people

in China, further supporting the robustness of the model and showing it can be effective across diverse populations,” Dr. Yu said.

As an observational study, the research does not demonstrate a causal connection between the plasma proteins and the development of liver disease. Further research is underway to explore possible pathways.

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