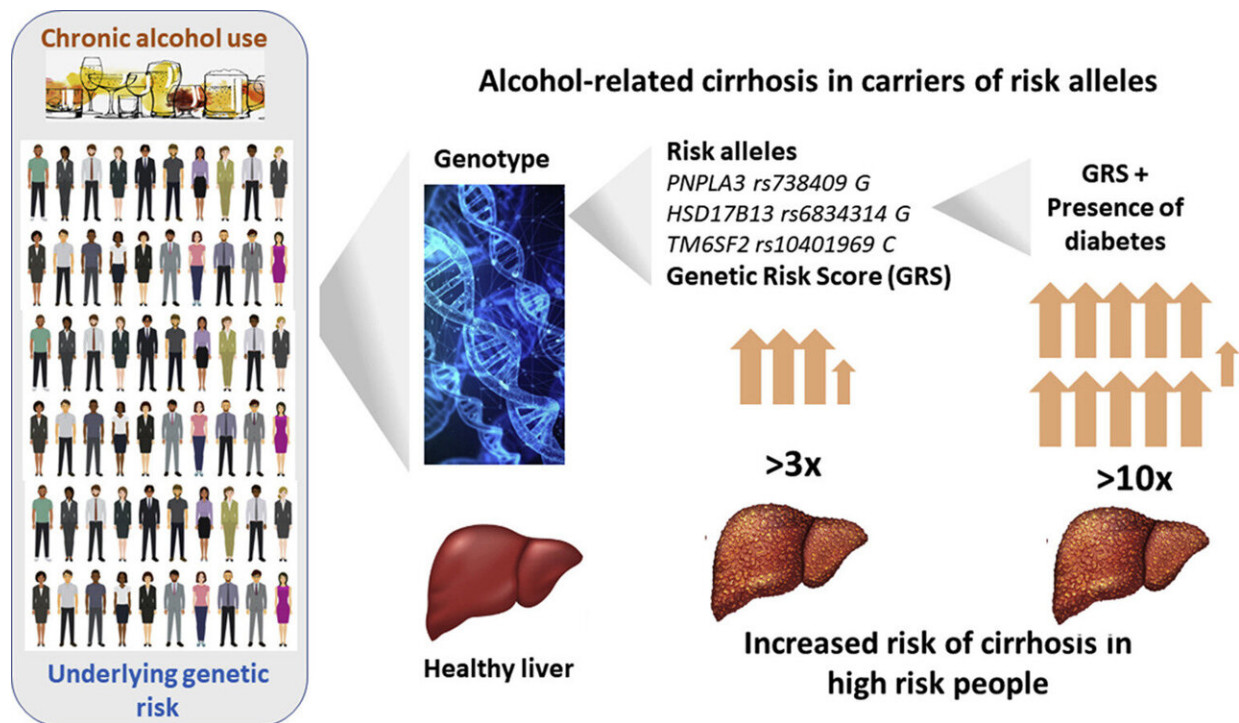


Genetic risk test developed to predict alcohol-related cirrhosis of the liver

October 25 2021



Graphical abstract. Credit: DOI: 10.1016/j.jhep.2021.10.005

An international research group led by the Centenary Institute has developed a world first genetic risk score (GRS) test able to identify patients at high-risk of developing alcohol-related cirrhosis.

Cirrhosis (scarring of the liver) is responsible for approximately 300,000

deaths each year world-wide.

In their study the researchers found that a high GRS from the test of excessive alcohol consumers meant a three-fold increase in [cirrhosis](#) risk. The presence of diabetes together with a high GRS increased the cirrhosis risk among drinkers more than 10-fold.

Clinical Associate Professor Devanshi Seth, Head of the Centenary Institute's Alcoholic Liver Disease Research Program and joint senior author of the study, said that only a minority of high-risk drinkers—approximately 10–15 percent—actually end up developing alcohol-induced cirrhosis. To date, however, there had been no way to identify those at-risk individuals.

"Our GRS test lets us identify at-risk individuals at an early stage enabling the application of focused interventions. Evidence suggests that even just informing excessive drinkers that they have an increased cirrhosis risk may motivate them to reduce their alcohol intake, helping prevent serious disease," said Clinical Associate Professor Seth.

Dr. John Whitfield from QIMR Berghofer Medical Research Institute and lead author of the study said the test had been developed by examining samples from patients with and without alcohol-related cirrhosis, but all with a history of heavy alcohol consumption.

"This was classified as men consuming more than 80 grams (8 standard drinks) of alcohol daily and women more than 50 grams daily, both for a time period of ten or more years."

"Risk scores were computed by the analysis of up to eight gene variations and three clinical risk factors (including type 2 diabetes) associated with [alcohol](#)-related cirrhosis," Dr. Whitfield said.

"We've shown that a GRS based on only three genetic risk variants plus diabetes status can be extremely meaningful in determining overall cirrhosis risk. Our [test](#) will allow for early and personalized management of high-[risk](#) patients," said Clinical Associate Professor Seth, also a principal scientist at the Edith Collins Centre, Royal Prince Alfred Hospital, Sydney Local Health District.

More information: John B. Whitfield et al, A genetic risk score and diabetes predict development of alcohol-related cirrhosis in drinkers, *Journal of Hepatology* (2021). [DOI: 10.1016/j.jhep.2021.10.005](https://doi.org/10.1016/j.jhep.2021.10.005)

Provided by Centenary Institute

Citation: Genetic risk test developed to predict alcohol-related cirrhosis of the liver (2021, October 25) retrieved 15 July 2023 from <https://medicalxpress.com/news/2021-10-genetic-alcohol-related-cirrhosis-liver.html>

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