Fat buildup in liver linked to heightened heart failure risk over next decade

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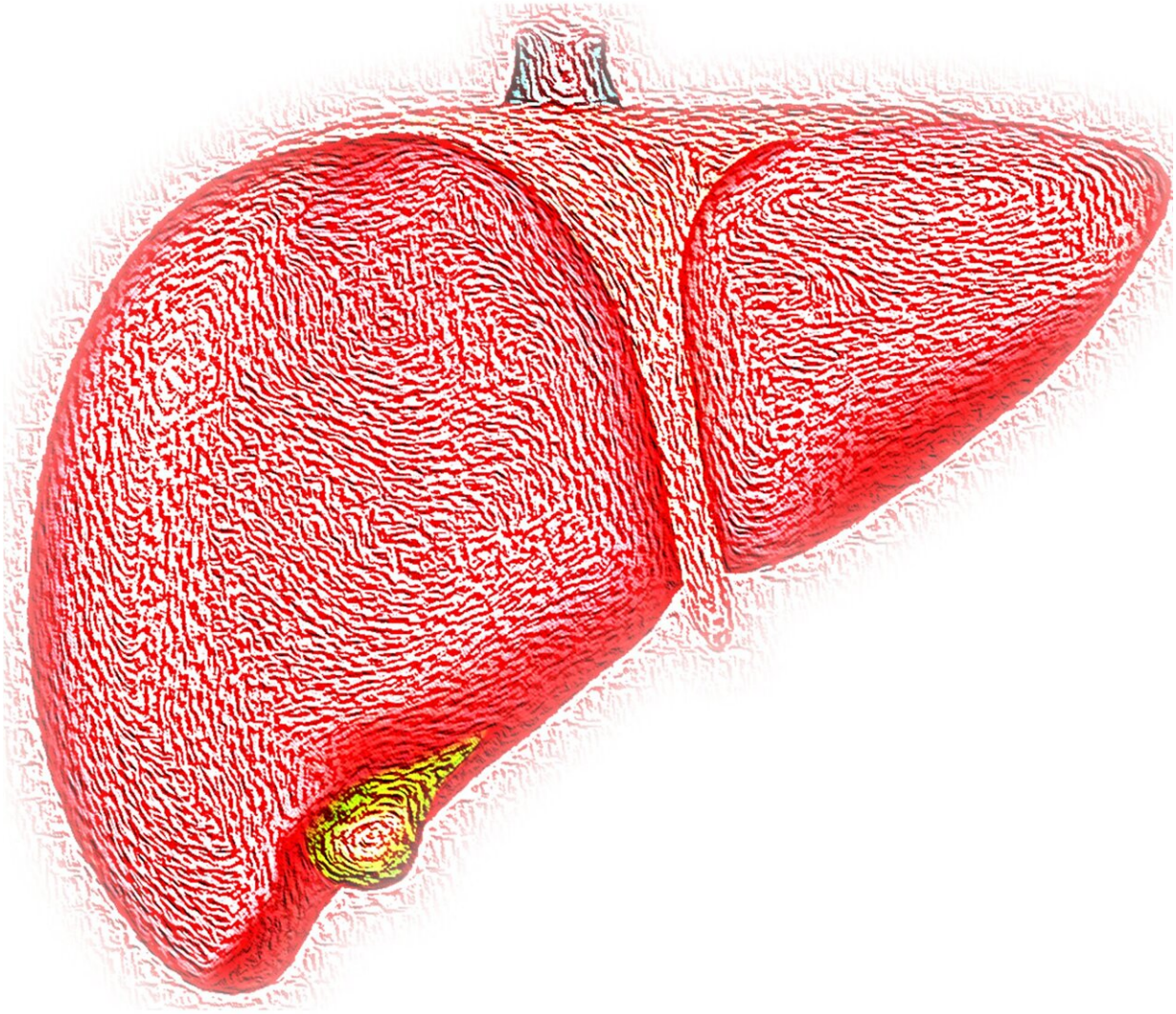

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The buildup of fat in the liver, known as non-alcoholic fatty liver disease, or NAFLD for short, is linked to a heightened risk of heart failure over the next decade, finds a pooled data analysis of the available research, published online in the journal *Gut*.

NAFLD has become one of the most common causes of chronic liver disease worldwide, affecting up to around 30% of adults. Its global prevalence is expected to rise sharply over the next decade as a result of increasing levels of overweight and obesity.

Recently published studies have implicated NAFLD in the development of heart failure—when the heart is unable to pump sufficient quantities of blood around the body. But the size of this risk and whether this differs according to liver disease severity aren't clear.

To try and find out, the researchers pooled the results of 11 long term international observational studies published up to March 2022. The studies looked at the potential links between NAFLD and heart failure among more than 11 million middle-aged adults.

Four studies were carried out in Sweden, Finland and the UK; four were carried out in the U.S.; and three were carried out in South Korea.

Half the study participants were women, with an average age of 55 and an average BMI (body mass index) of 26: a BMI between 18.5 and 24.9 indicates a healthy weight; 25 and 29.9 indicates overweight; and a BMI of 30 and above indicates obesity.

Around 1 in 4 (2.9 million; 26%) of the study participants already had

NAFLD. Heart failure was diagnosed in 97,716 during an average monitoring period of 10 years.

Pooled data analysis of the results of all 11 studies showed that the presence of NAFLD was associated with a 50% heightened risk of developing heart failure during the monitoring period. This was irrespective of age, sex, body fat, diabetes, high blood pressure, ethnicity and other common cardiovascular risk factors.

To overcome the inherent issues associated with different study designs and methods, the researchers pooled the data from selected studies by study country, length of monitoring period, method of heart failure diagnosis, and method of NAFLD diagnosis, but the results were still the same.

The risk also seemed to increase in parallel with the severity of NAFLD, especially with more extensive liver fibrosis (scarring), when the risk was 76% higher, although this finding was based on the findings of only two studies.

It's not clear exactly how NAFLD might increase the risk of cardiac complications involved in the development of heart failure, say the researchers. But NAFLD worsens systemic insulin resistance, promotes plaque formation, and releases a cocktail of inflammatory and blood-thickening chemicals, they explain.

Newer diabetes drugs, which lower blood glucose, seem to have some favorable effects on the risks of hospital admission for heart failure, they add.

The researchers acknowledge various limitations to the pooled data analysis, chief among which was the observational nature of the included studies, which precludes establishing causality.

But their findings echo those of previously published research, and they suggest that anyone with NAFLD warrants careful medical monitoring because of the link between this condition and heart failure.

More information: Non-alcoholic fatty liver disease and risk of new onset heart failure: an updated meta-analysis of about 11 million individuals, *Gut* (2022). DOI: 10.1136/gutjnl-2022-327672

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