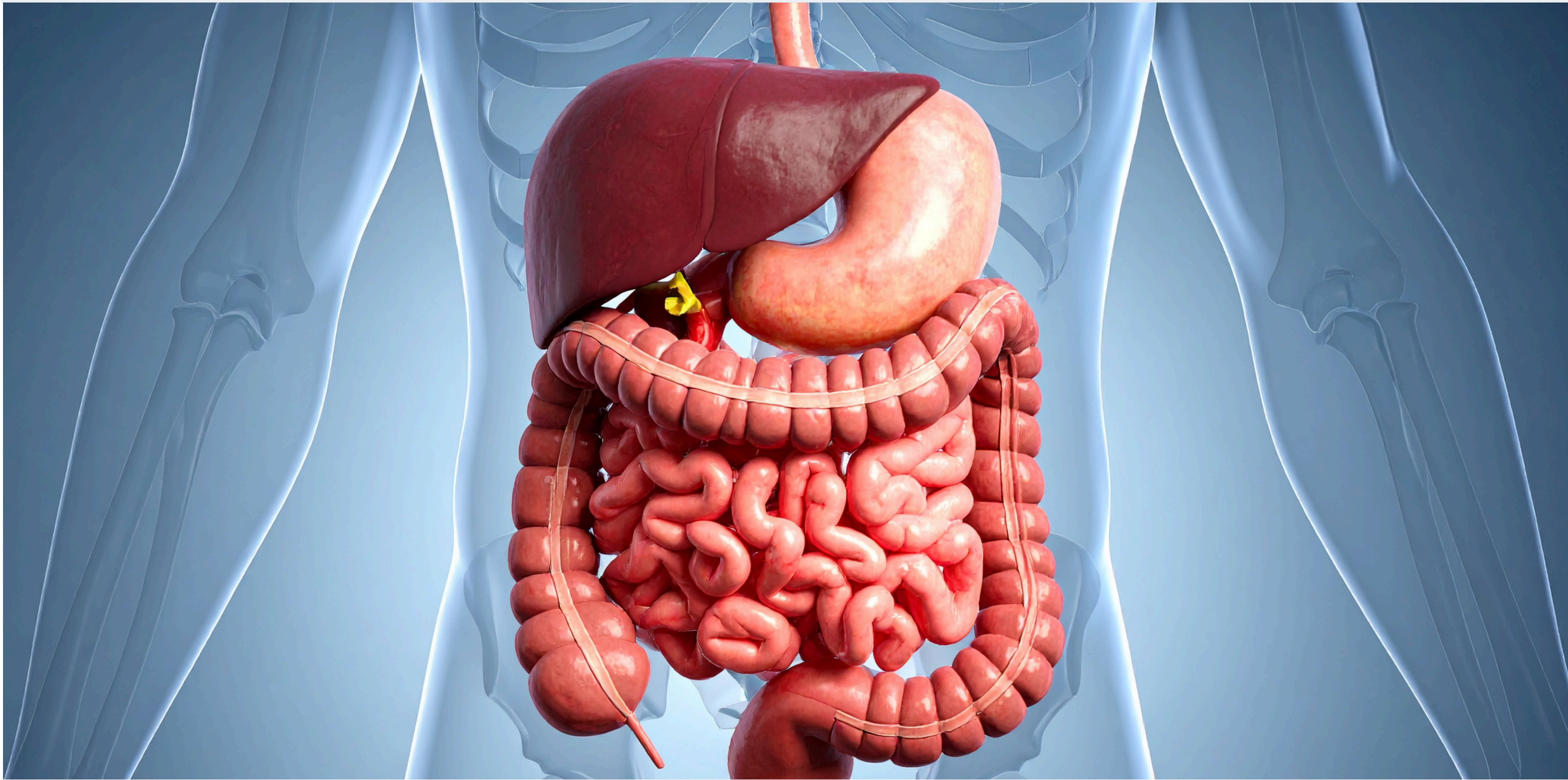




Gut Microbiota and Liver Health: Meta-Analysis of - Containing Probiotics in NAFLD Management

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 JOURNAL: INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 2025;26(13):

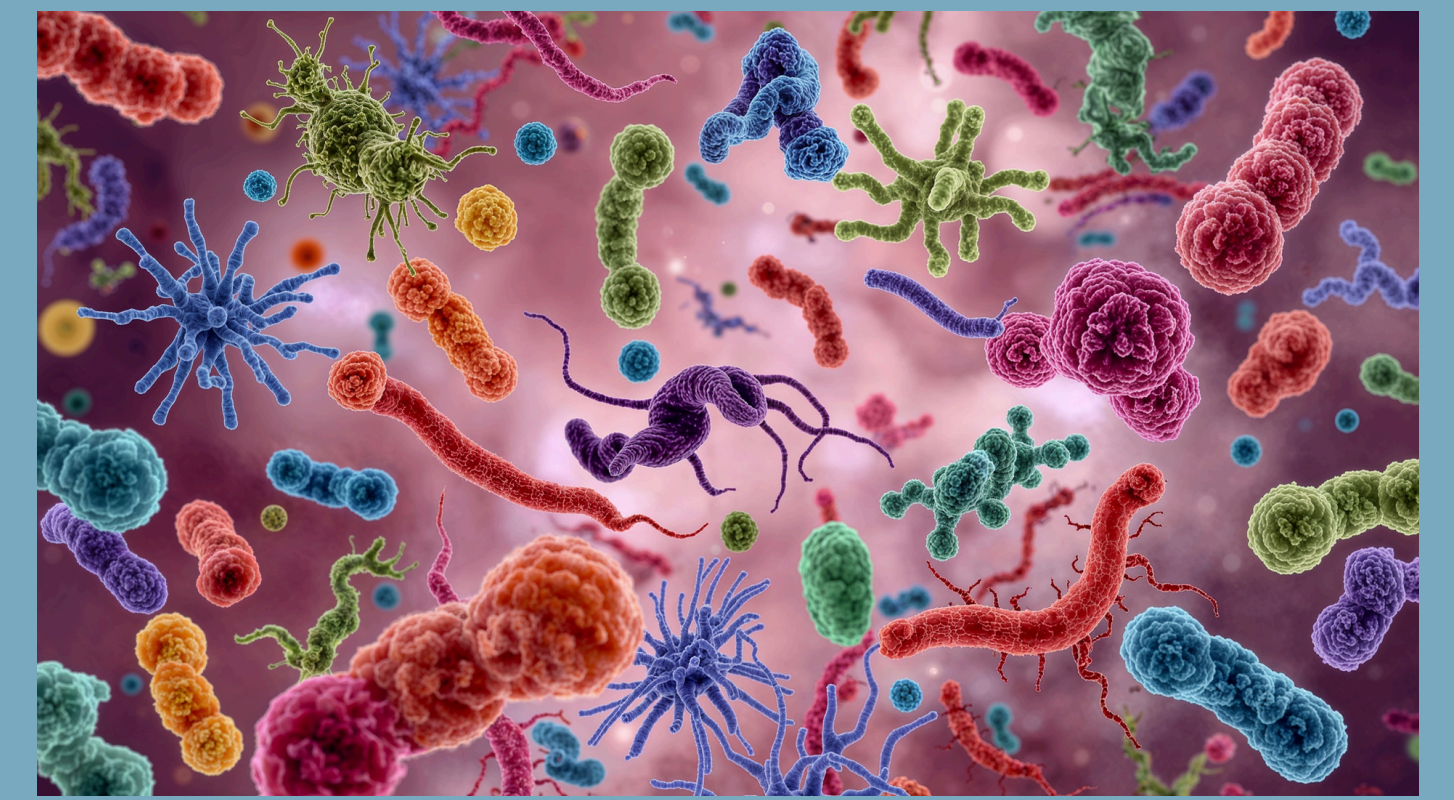


Cardiovascular disease, type 2 diabetes and non-alcoholic fatty liver disease (NAFLD) are common comorbidities due to the presence of several shared risk factors including hyperglycaemia and inflammation. The gut microbiota may be a regulator involved in these processes and may therefore be a key therapeutic target.

This study aimed to determine the effects of the supplementation of Bifidobacterium containing probiotics on liver health and cardiovascular risk factors of individuals with NAFLD. This was a meta-analysis of 24 randomised controlled trials of combination Bifidobacterium probiotics on important health measures, such as blood lipids, blood pressure, blood sugar levels, and markers of inflammation.

The results showed that Bifidobacterium containing probiotics improved total cholesterol, triglycerides, low-density lipoprotein cholesterol, fasting glucose, and inflammatory markers. Modest improvements were seen in NAFLD severity, however there was only a minimal effect on the liver injury markers alanine aminotransferase and aspartate aminotransferase.

The authors concluded that Bifidobacterium containing probiotics may be of benefit to cardiometabolic markers in individuals with NAFLD. However, larger, well-designed RCTs are warranted. ■



Gut microbiota in nonalcoholic fatty liver disease: PREDIMED-Plus trial sub analysis

LAURA TORRES-COLLADO, FRANCISCO J TINAHONES, ISABEL MORENO-INDIAS, ET AL.
 JOURNAL: GUT MICROBES 2023;15(1):2223339

This study aimed to evaluate the effect of the Mediterranean diet (MD) on the gut microbiota and any associated changes in biochemical markers of NAFLD/non-alcoholic steatohepatitis (NASH). This was a substudy of a randomised controlled trial called the PrediMed-Plus study. The study found a relationship between changes in liver disease biochemical indices and gut microbiota changes following the adoption of a MD. The MD actually improved scores for liver steatosis and fibrosis within one year and a relationship between these changes and the gut microbiota was found. The authors concluded that lifestyle intervention is important for the management of metabolic disorders, particularly when they manifest in the liver. ■

Probiotics and non-alcoholic fatty liver disease in children and adolescents: a systematic review

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 JOURNAL: REVISTA ESPAÑOLA DE ENFERMEDADES DIGESTIVAS 2023;115(8):418-427

Non-alcoholic fatty liver disease (NAFLD) is becoming a worldwide problem in children as a direct result of the global obesity epidemic. Although the development of NAFLD isn't fully understood, the gut microbiota may be a key regulator in linking it with obesity.

This study aimed to summarise the available literature on the use of supplementary microbials in children with NAFLD. This was a systematic review of five randomised controlled trials.

The results showed that there was an improvement to the liver enzyme alanine aminotransferase, however it was also shown that there were a lot of discrepancies between the trials. It was concluded that although there were some promising results shown, the differences between the trials means there is a lack of evidence to support the use of supplementary probiotics and synbiotics as a therapy for children with NAFLD. ■

Exploring the Potential of Oral Butyrate Supplementation in Metabolic Dysfunction-Associated Steatotic Liver Disease : Subgroup Insights from an Interventional Study

MILOŠ MITROVIĆ, PETAR SVORCAN, SANJA ERCEG, ET AL.
 JOURNAL: INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 2025;26(12): **With Expert Review from Chloe Steele**



The pathogenesis of metabolic dysfunction-associated steatotic liver disease (MASLD) is poorly understood. However, it is thought that gut dysbiosis may be involved through the actions of the short chain fatty acids, such as butyrate, that the bacteria produce. Butyrate is associated with healthy gut microbiota and has been shown to reduce lipid production and decrease hepatic steatosis. This study aimed to determine the effects of butyrate supplementation in individuals with MASLD. This was a 12-week randomised control trial of 181 individuals with MASLD and at least one comorbidity from obesity, hypertension, or dyslipidaemia. Participants were given either 1000 mg sodium butyrate plus diet plan or 1000 mg calcium butyrate plus diet plan. The results showed that neither supplementation affected liver steatosis. However, sodium butyrate did improve some biochemical indicators of liver function including trimethylamine N-oxide and fatty liver index. Subgroup analysis showed that individuals with a lower body mass index, higher HbA1c, and a lower abundance of the gut bacteria Subdoligranulum and higher Catenibacterium may have a better response to butyrate supplementation. The authors concluded that neither sodium nor calcium butyrate improved liver steatosis, although specific patients may see benefits to metabolic and inflammatory markers. ■