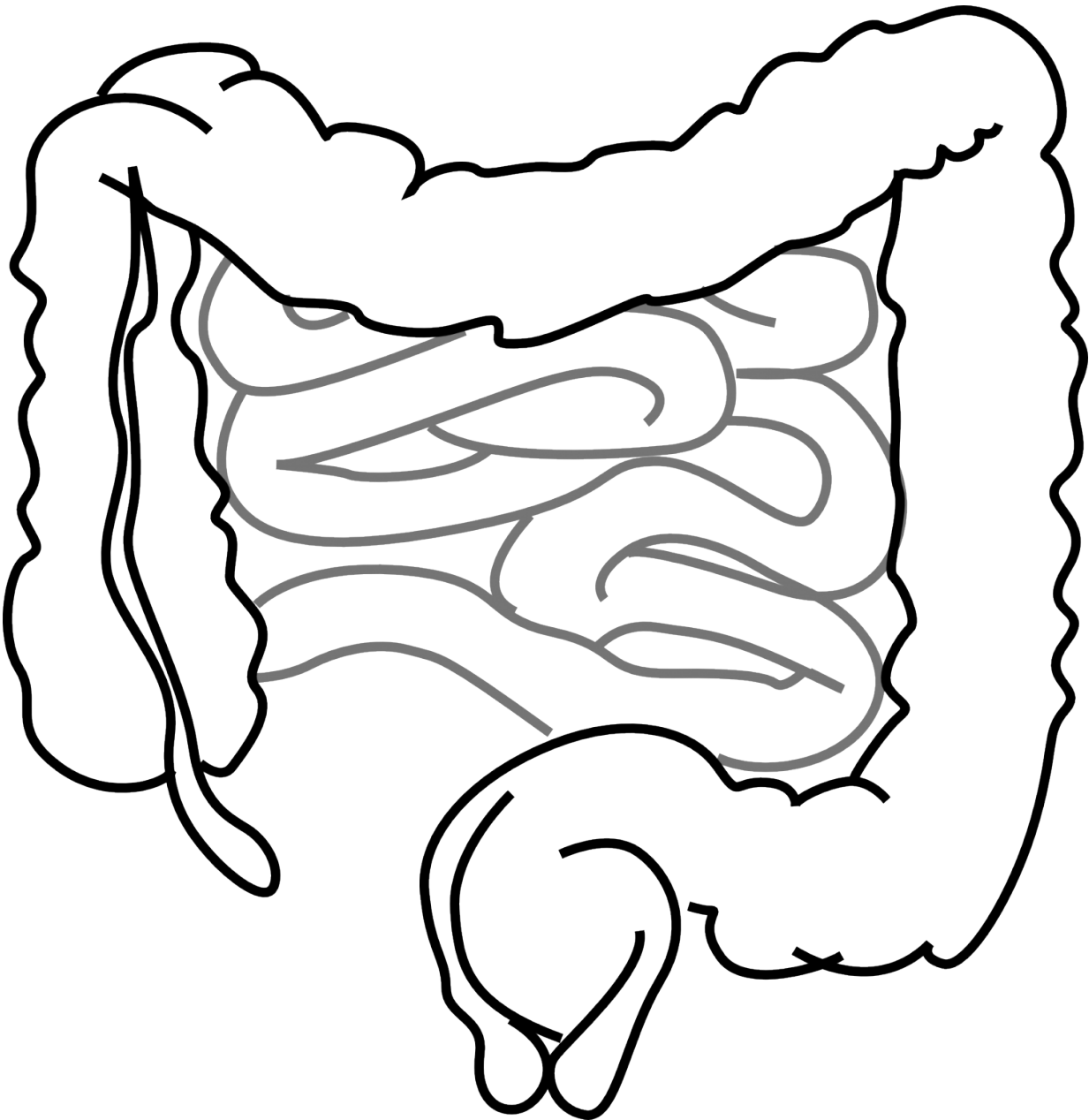


Improved gut microbiota with cholesterol-lowering medication

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There is a clear link between improved gut microbiota and one of our most common cholesterol-lowering drug groups: statins. This is evident from a European study involving researchers from the University of Gothenburg.

Scientists have previously found an association between the [gut microbiota](#) and various metabolism-related and cardiovascular diseases. Now the current study, published in the journal *Nature*, shows improvement in gut [microbiota](#) in the participant group who were taking statins.

The direct mechanisms have not been identified. Nonetheless, in this first major publication from MetaCardis (Metagenomics in Cardiometabolic Diseases), a collaborative EU-based project involving 14 research groups from six countries, the results are unequivocal.

One of the authors is Fredrik Bäckhed, Professor of Molecular Medicine at Sahlgrenska Academy, University of Gothenburg, who focuses on the role of gut microbiota in metabolism.

"Although the study does not provide a [causal link](#)," he says, "it's exciting to see how a well-established and clinically used [drug](#) can change the gut microbiota. Time will tell whether statins affect bacteria in the gut directly or whether these drugs affect both gut and [immune cells](#) that, in turn, help modify the microbiota."

The purpose of MetaCardis is to clarify whether and how gut microbiota may be linked to cardiovascular disease. In the project, more than 2,000

Europeans with varying degrees of metabolic and cardiovascular disease have been meticulously investigated.

The gut microbiota is divided into various main groups, known as enterotypes, that vary among individuals. One of these, labeled Bact2, has fewer bacteria in terms of number and composition alike. Microbes lacking in Bact2 include anti-inflammatory bacteria like *Faecalibacterium*, one effect of which is to strengthen the immune system.

Bact2 is more common in patients with [inflammatory bowel disease](#) (IBD), multiple sclerosis and depression. In the current study, the scientists found this enterotype also to be significantly more prevalent in patients with obesity (18%) than people without it (4%)—an observation verified in an independent Belgian study.

The positive and hitherto unknown effect of statins identified by the researchers was that the proportion of individuals with Bact2 decreased in the group given [statin](#) therapy, resulting in a more normal gut microbiota. Together, the various study findings open up for new forms of treatment in the future, in which drugs can be used to alter the gut microbiota.

"Perhaps drugs like statins can be used to change the ecology in the gut. But that calls for further studies," Bäckhed notes.

More information: Statin therapy is associated with lower prevalence of gut microbiota dysbiosis, *Nature* (2020). [DOI: 10.1038/s41586-020-2269-x](https://doi.org/10.1038/s41586-020-2269-x)

Provided by University of Gothenburg

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