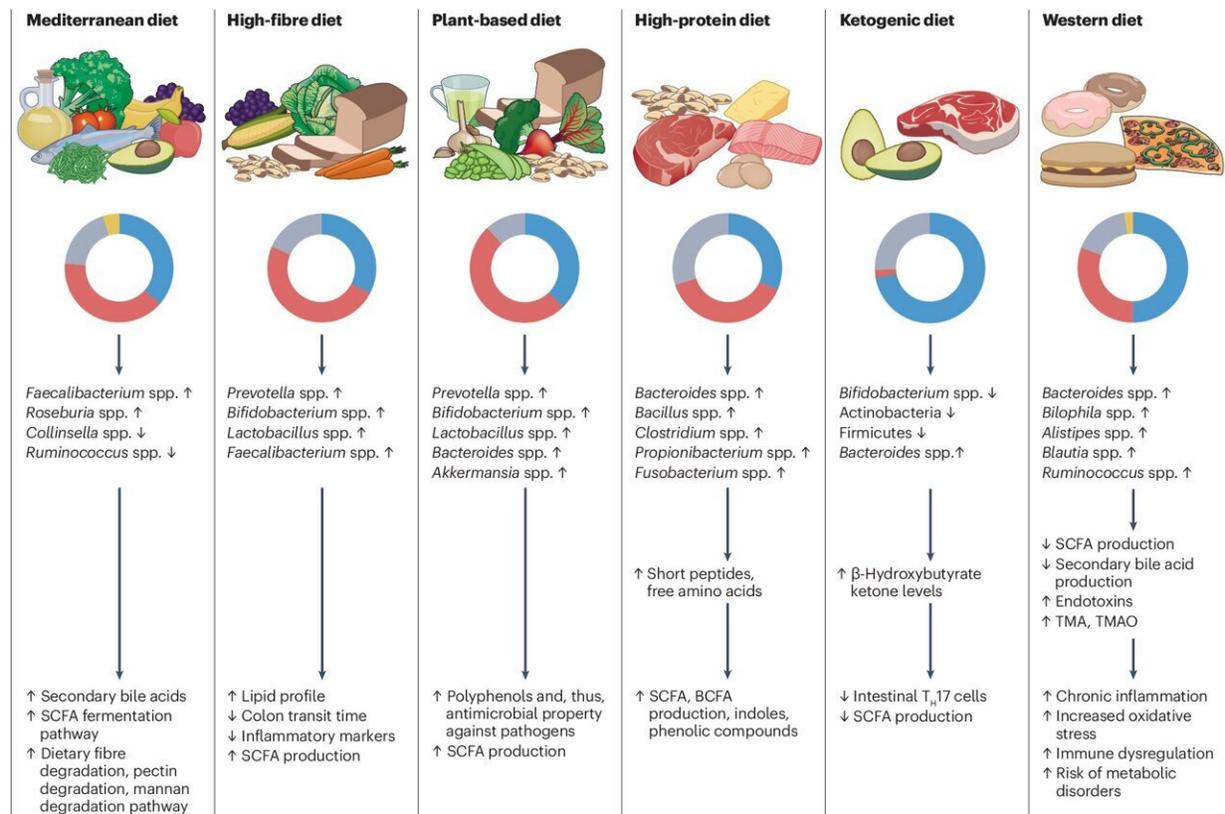


Western diets pose greater risk of cancer and inflammatory bowel disease, study finds

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Macronutrient composition of whole diets and their effect on the gut microbiota. Credit: *Nature Reviews Microbiology* (2024). DOI: 10.1038/s41579-024-01068-4

Western diets pose a greater risk of inflammatory bowel disease (IBD) and colorectal cancer, according to a milestone review of what people

eat around the world.

The study of six prevalent diets has examined how what we consume impacts our [gut microbiome](#)—the community of microorganisms that live in our intestines—and how the shifting balance of its composition influences our overall [health](#). The review was conducted by APC Microbiome Ireland (APC), an SFI Research Centre at University College Cork (UCC), and Teagasc.

The review is [published](#) in *Nature Reviews Microbiology* and titled "The interplay between [diet](#) and the gut microbiome: implications for health and disease."

The study, led by Prof. Catherine Stanton—an APC PI and senior principal research officer at Teagasc, examined Mediterranean, high-fiber, plant-based, high-protein, ketogenic, and Western diets.

The comprehensive review reveals how different diets significantly alter the composition and functionality of the gut microbiome, highlighting the production of essential molecules produced during metabolism such as short-chain fatty acids.

It underscores the detrimental effects of the Western diet, characterized by high fat and sugar intake, compared to the benefits of diets rich in plant-based and high-fiber foods.

By contrast, it finds that a Mediterranean diet, high in fruits, vegetables, is effective in managing conditions such as cardiovascular disease, IBD, and type 2 diabetes.

Prof. Stanton said, "Our review highlights the profound impact of different diets on the gut microbiome. This understanding is crucial for developing dietary recommendations that promote health and prevent

disease. It's fascinating to see how dietary choices can influence the balance of microorganisms in our gut and their metabolic functions."

The review offers valuable insights for the [food industry](#) and health care professionals, guiding them in making informed decisions about diet and health. The detailed analysis of how different diets affect the microbiome provides a foundation for developing targeted nutritional therapies and improving public health outcomes.

Prof. Paul Ross, Director of APC Microbiome Ireland, and co-director of UCC Futures Microbiome and Health added, "This review is a significant milestone in microbiome research. It provides a detailed look at how dietary patterns shape the gut microbiome and underscores the potential for diet-based interventions in clinical practice. It provides tangible data on how the microbiome is intrinsically relevant to creating health benefits for society."

The review also emphasizes the need for exhaustive studies to better understand the causal relationships between individuals, their diet, and microorganisms. This understanding is vital for advancing precision nutrition and developing microbiome-based therapies tailored to individual health needs.

More information: Fiona C. Ross et al, The interplay between diet and the gut microbiome: implications for health and disease, *Nature Reviews Microbiology* (2024). [DOI: 10.1038/s41579-024-01068-4](https://doi.org/10.1038/s41579-024-01068-4)

Provided by Teagasc

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