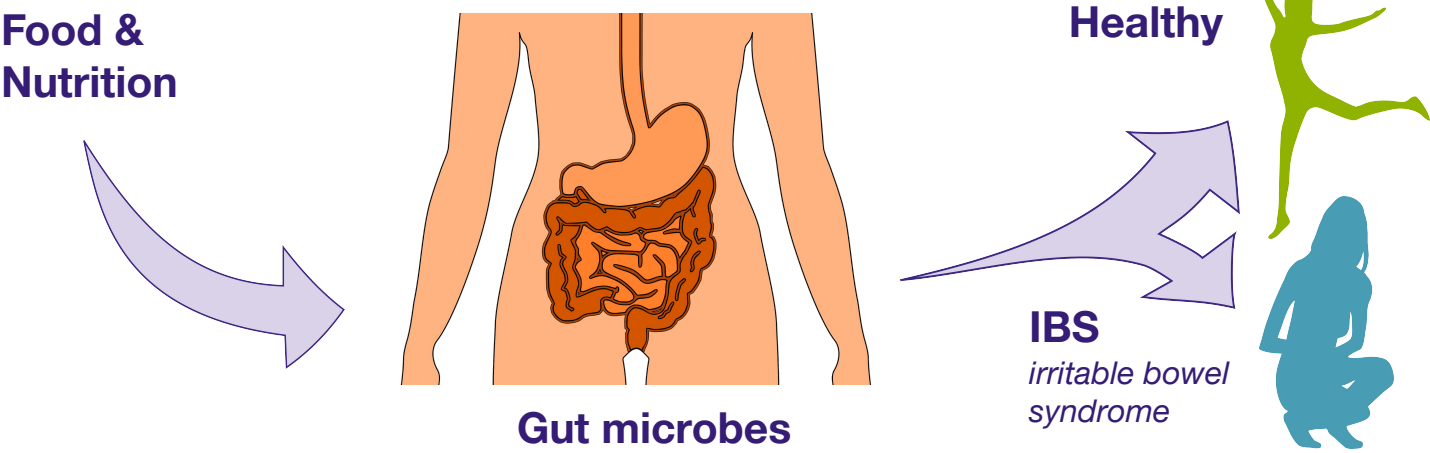


# Food & Nutrition: The driving factors of our gut microbes

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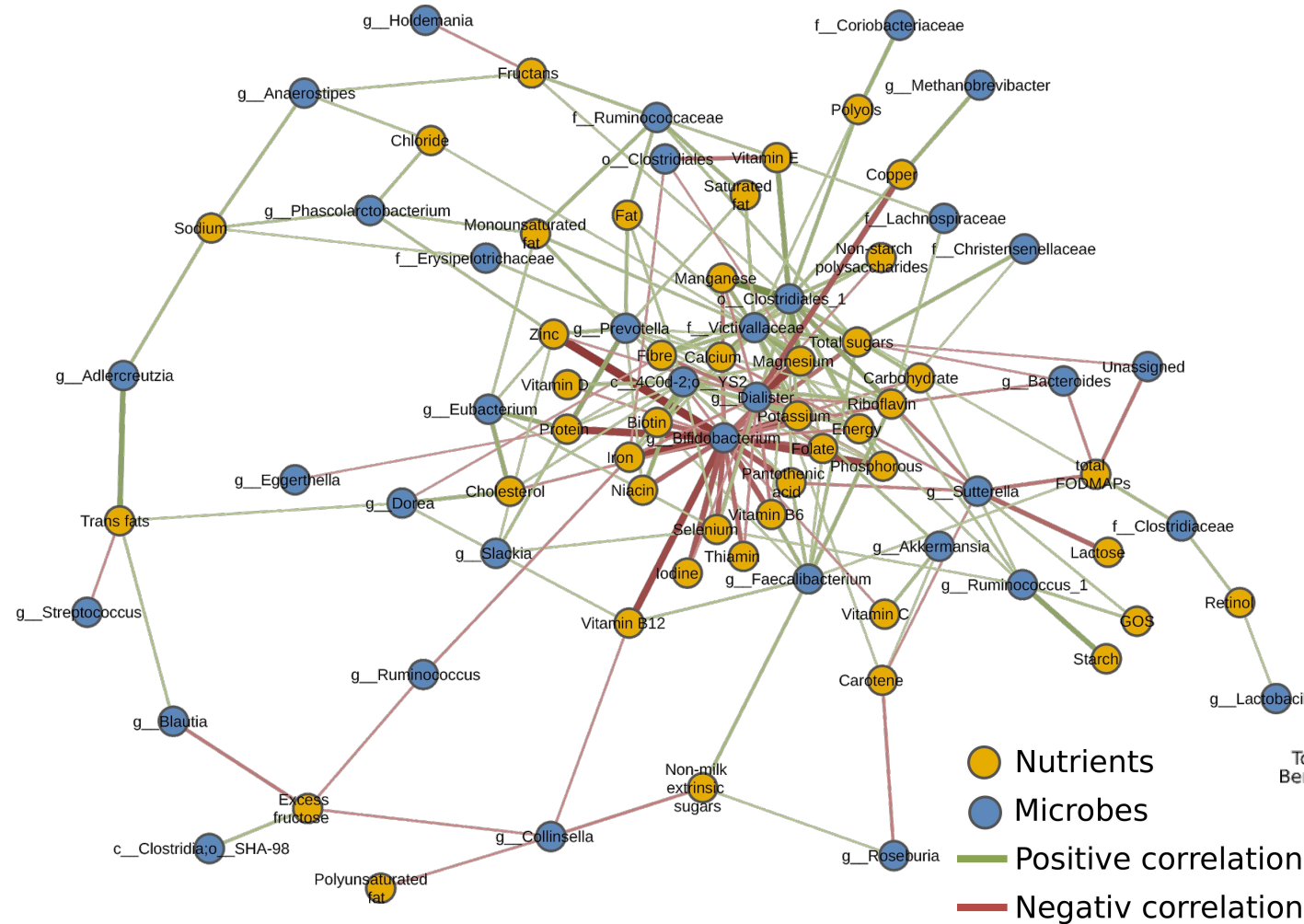


How do different diets shape the gut microbiome of IBS patients?

## Results

- Diet:microbe associations appear to be more clear at the detailed nutrient level and less clear at higher-level dietary categories such as *Mediterranean diet (MDS)*
- Nutrients are found to be positively correlated with several microbial taxa belonging the order Clostridiales, the family Ruminococcus and some unidentified microbes
- Bifidobacterium shows a strong but unexpected inverse correlation with many nutrients, potentially caused by a dysbiotic gut microbial system of IBS patients.

## Correlation network (nutrients ↔ microbes)



## Conclusions

We need a detailed nutrient-based classification scheme to investigate dietary effects on the microbiota.

Microbial associations are most strongly correlated at the individual nutrient level.

Is IBS caused by an “Eutrophication”-like nutrient overload?

Strong positive correlations of Clostridiales together with unexpected negative correlated Bifidobacterium could be interpreted as a dysbiotic blooming of disease associated microbes at the expense of commensal microbes potentially caused by nutrient overload, like algal blooms in aquatic systems.

## Introduction

Since gut microbes are known to play a key role in human health and disease risk, it becomes essential to understand how diets, foods and nutrients shape the gut microbiome. Our study aims to explores the dietary impact on patients having *irritable bowel syndrome (IBS)*.

## Methods

We correlated 55 dominant taxonomic groups from 16S rRNA sequencing with intakes of 39 food groups and 45 nutritional parameters in 95 IBS patients.

## Correlation heatmap

