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# Adults having Bariatric Surgery's Gut Microbiota Profile and their factors

**Yang Li***

*Department of Oncology, Coventry University, UK*

## INTRODUCTION

The gut microbiota (GM) has been implicated in metabolic improvements and weight loss following bariatric surgery (BS). In this comprehensive review, we investigate changes in the GM in obese adults who received BS utilising 16S rRNA and metagenomics. We looked at the LILACS, PubMed, Scopus, and Web of Science databases. Two impartial reviewers looked at ten-year-old publications using Rayyan QCRI. Clinical trials were included in the initial search of 1275 documents after the exclusion criteria were applied. Different phyla of gut bacteria predominated depending on the investigation.

## DESCRIPTION

However, the majority of them said that after BS, there was an increase in diversity (D), bacteria (B), and lactic acid bacteria (P). Following Roux-en-Y gastric diversion (RYGB) and sleeve gastrectomy (SG), firmicutes (F), B, and the (F/B) proportion were inconsistent, either increasing or decreasing as compared to before an operation. Following the application of RYGB, an increase in the proportion of Actinobacteria (A) and a decrease in the relative proportion of F were noted. However, the same problem was not seen when SG procedures were applied. Little is known about how the surgical procedure affected phyla, but it clearly had an impact on the prevalence of genera and the dominant bacteria. Over the past few decades, there has been an increase in the incidence of obesity, a public health problem whose complexity makes it challenging to manage. Among other chronic non-communicable diseases, it raises the risk of acquiring cardiovascular, musculoskeletal, type 2 diabetes mellitus (type 2 DM), and specific forms of cancer. The link between GM and BS is complex because surgery itself modifies the intestine's structure and physiology. In addition to the postoperative changes, changing diet, and rapid weight reduction, it is a complex condition that impacts the GM. The likelihood of metabolic improvement and weight loss, on the other hand, seems to be influenced by the GM composition.

Regardless of the surgical method, microbial metabolites appear to play a substantial influence in the physiological and health alterations in addition to gut bacteria. Metabolites generated from microbial metabolism, including as short-chain fatty acids, secondary bile acids, betaine, and choline, may have a synergistic and advantageous impact on human metabolism and BMI reduction after BS. In a longitudinal investigation of severely obese people undergoing RYGB or SG, significant changes in the GM composition and microbial metabolites were seen between the pre and post-operative periods. In addition, concentrations of acetate, butyrate, and propionate significantly decreased after BS. GM alterations have been associated with better glucose homeostasis, weight loss, altered gastrointestinal tract food course and motility, altered nutritional status, and altered diet therapy after BS. Following surgery, the GM composition is affected by food digestion and absorption as well as a supplementation programme, necessitating [1-5].

Similar to BS, surgery for obesity benefits lipid and glucose metabolism, type 2 diabetes remission, weight loss, and GM alterations. In most studies, patients receiving RYGB had higher levels of B, Actinobacteria (A), P and D however the F/B ratio varied. Following SG, there were more B, P, and diversity numbers, but no reports on A or agreement on the F/B ratio. After both procedures, there were reports of a decreasing percentage of F. Specific bacterial genera may not always have the same body of literature as phyla. The impact of the alterations in bacterial population is likewise uncertain.

## CONCLUSION

It is impossible to say whether the GM would stay the same because the outcomes are debatable, vary depending on the surgical procedure, and may change depending on the researched postoperative term. Additionally, it is difficult to tell from the available literature whether the GM changes are due to the BS itself (hormonal, anatomical, intestinal functional and microbial changes) or to alterations in food and lifestyle, such as those that follow surgery. It is currently not sensible to state the extent of the influence of alterations to the GM as a contributing

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**Corresponding author** Yang Li, Department of Oncology, Coventry University, UK, E-mail: Yangli4783@gmail.com

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factor for weight loss promotion and metabolic improvement following BS.

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## CONFLICT OF INTEREST

The author declares there is no conflict of interest in publishing this article has been read and approved by all named authors.

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