THE INFLUENCE OF DIETARY OILS AND FATS ON THE GUT MICROBIOTA

Mireia Guiteras Relaño
FINAL DEGREE PROJECT - FEBRUARY 2024

UAB
Universitat Autònoma de Barcelona

AIM

To determine the influence of dietary oils and fats on the gut microbiota.

- To understand the main concepts: dietary oils and fats and gut microbiota.
- To learn the possible health effects
- To study the effect of different types of diets

INTRODUCTION

Triacylglycerols are digested into (Ye et al. 2021):

- Saturated fatty acid (**SFA**) → Short chain fatty acid (**SCFA**)
- Unsaturated fatty acid → Monounsaturated fatty acid (**MUFA**) / Polyunsaturated fatty acid (**PUFA**)

Non absorbed fats reach the colon and **gut microbiota** take advantage of them (energy, vitamins, protection) (Jandhyala et al. 2015).

Gut microbiota can contribute positively or negatively on **human health** by changing microorganisms proportions (Singh et al. 2017).

FATS AND GUT MICROBIOTA

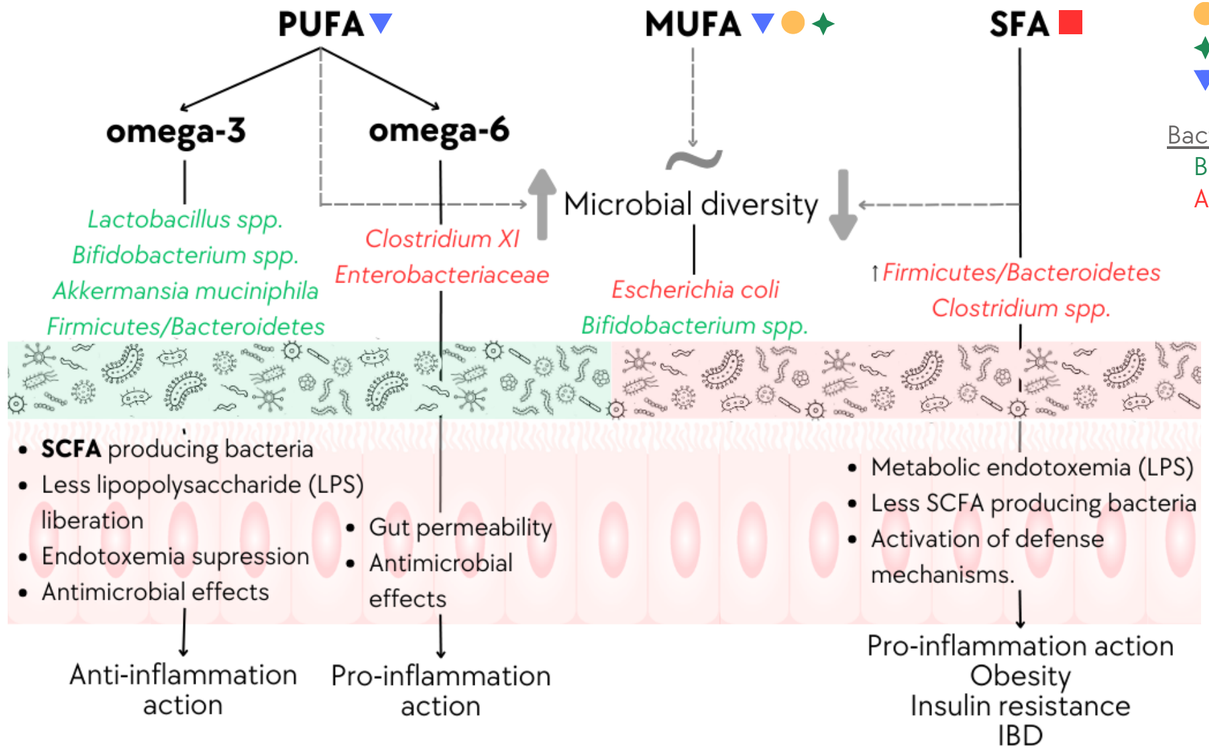

Figure 1. Illustration of how the dietary oils and fats influence gut microbiota (inspired by Ye et al. 2021).

REFERENCES

- Jandhyala SM, et al. 2015. Role of the normal gut microbiota. WJG. 21(29):8787–8803
- Singh RK, et al. 2017. Influence of diet on the gut microbiome and implications for human health. J Transl Med. 15(1):73
- Ye Z, et al. 2021. Influences of dietary oils and fats, and the accompanied minor content of components on the gut microbiota and gut inflammation: A review. Trends Food Sci Technol. 113:255–276

CONCLUSIONS

- Dietary oils and fats can modify the gut microbiota which further influence the host health.
- An excess of SFAs leads to adverse effects, MUFAs indicate controversial results, and PUFAs, especially omega-3, suggest some health benefits.
- The Mediterranean diet leads the individual to a healthy balance, as it boosts beneficial bacteria thanks to the ingested fats and fiber.