

Preface

This thesis is submitted for a PhD degree at the Faculty of Science, University of Copenhagen, Denmark. It present work carried out from February 2014 to January 2017 supervised by Lesli H. Larsen, Arne Astrup and Lena K. Brahe.

The purpose of this thesis was to investigate how nutrition affects the gut and the microbiome in relation to obesity and obesity-associated diseases. The thesis is founded on data from three studies (**KIFU**, **PROKA**, **MNG**), which are presented in **Paper I**, **II** and **III** and when appropriate included in the chapters of this thesis. All studies were conducted at the Department of Nutrition, Exercise and Sports, University of Copenhagen. The latter study (**Paper III**, **MNG**) is part of the EU project MyNewGut (<http://www.mynewgut.eu/>) where several partners have been involved. Intervention products were delivered by Cargill R&D Centre Europe, Belgium, faecal samples has been analysed by the group at Institute of Agrochemistry and Food Technology, Spain, and blood samples for clinical chemistry were analysed by the group at Institute of Clinical Chemistry and Laboratory Medicine, Germany.

The following papers are included in the thesis:

- Paper I** **Louise Kjølbæk**, Janne Kunchel Lorenzen, Lesli Hingstrup Larsen, Arne Astrup.
Calcium intake and the associations with faecal fat and energy excretions, and the lipid profile in a free-living population.
(Submitted to British Journal of Nutrition)
- Paper II** **Louise Kjølbæk**, Lone Brinkmann Sørensen, Nadja Buus Kristensen, Carrie Klestrup Rasmussen, Janne Kunchel Lorenzen, Anja Serena, Arne Astrup, Lesli Hingstrup Larsen.
Protein supplements after weight loss do not improve weight maintenance despite beneficial effects on appetite sensation and energy expenditure: a randomized, controlled, double-blinded trial.
(In review, American Journal of Clinical Nutrition)
- Paper III** **Louise Kjølbæk**, Alfonso Benítez-Páez, Lena Kirchner Brahe, Arne Astrup, Gerhard Liebisch, Joan Vermeiren, Yolanda Sanz, Lesli Hingstrup Larsen.
Effects of arabinoxylan oligosaccharides and polyunsaturated fatty acid intakes on the gut microbiota and metabolic risk markers in a metabolically challenged population.
(Manuscript draft, which has only been reviewed by LK, LKB, AA and LHB)