

The relationship between colonic metabolism and health or disease of the host is still far from clear. The central question: 'Is it possible to manipulate the colonic flora in such a way as to obtain health-promoting effects for the host?' continues to be subject of investigation in many research groups. Modern molecular biological techniques that extend our knowledge about the normal microbiota of the human gastrointestinal tract, its day-to-day variability and inter-individual differences are being developed. These techniques will also prove indispensable for precise evaluation of effects of manipulations. Beneficial modification of the colonic flora is attempted by administration of pre- and probiotics.

The physiology of the colonic metabolism, the composition of the colonic microflora and the techniques to analyse it are the first subjects addressed in this supplement. To what extent pre- and probiotics are able to alter colonic processes is discussed. A number of non-digestible food components become available for colonic fermentation each day. Their relationship with the intestinal microflora is described. The property of prebiotics to modulate colonic flora is well documented; one of the well-known prebiotics is lactulose. An update on its applications and (potential) properties is given. Two subjects concerning the modulation of the microbiota that recently attracted much attention, are dealt with:

- Altering microflora in cattle to reduce infections, improve growth and reduce the need of application of antibiotics.
- Modulation of the intestinal microflora to reduce the prevalence of atopic diseases.

We can expect that – as a result of applying new techniques to characterize the human microflora in detail and to investigate its metabolic activity and functionality – we finally will be able to answer our central question. Newly gained knowledge will aid in identifying circumstances in which the application of pre- and probiotics is useful or redundant.

But it might take some time.

Prof. Dr. Roel J. Vonk  
Marion G. Priebe  
Laboratory of Nutrition and Metabolism  
Laboratory Centre CMC V, Y2147  
University Hospital Groningen  
Hanzeplein 1  
P.O. Box 30.001  
9700 RB Groningen, The Netherlands  
r.j.vonk@med.rug.nl  
m.g.priebe@med.rug.nl