

Gut Microbiota and Metabolic Consequences

Georgina Hold

Senior Lecturer in Gastroenterology, Aberdeen University

Visiting Professor, Harvard University

The human gut microbiota plays a huge role in the development and maintenance of health. Many recent studies have attempted to define links between microbiota residents, their function and the development of diseases including gastrointestinal diseases and also extra-gastrointestinal diseases including metabolic syndrome and obesity-related conditions. Gut microbiota drive the development of inflammation within the colon and such inflammation is implicated in disease development. Although the precise mechanisms through which the microbiota is involved remain elusive, the message is clear, the microbiota contributes to disease risk by influencing a number of key host mechanisms. It is also recognized that we have the ability to influence the functioning of the gut microbiota by considering our nutritional intake. We have always known that 'We are what we eat' but it is also true that 'They [our gut microbiota] are what we eat'. We therefore have a huge opportunity to positively influence our health through microbial manipulation. There is now a clear need to move past defining the constituents of the gastrointestinal microbiota and to focus more on understanding the functional capabilities of the resident microbial community and how this impacts on host health. This presentation will give an overview of current knowledge in the area of the gut microbiota and its role in different diseases. It will also examine the latest evidence for manipulating the gut microbiota during dysbiotic episodes. By more fully understanding the interaction between the host and its resident microbiota, in the context of health and disease, we will open new therapeutic and diagnostic opportunities for reducing the global health burden.