It has been a matter of debate whether gastric acid hypersecretion observed in patients with DU is a result of *H. pylori* infection or if the infection accelerates development of DU in subjects who originally had acid hypersecretion. Our data showing that acid secretion was recovered in association with the decrease in serum gastrin levels in some DU patients and that MAO levels in patients with DU after eradication are still higher than those of normal subjects without *H. pylori* infection may support the latter idea. Moreover, this idea may explain the fact that there are more patients with GU than DU among Japanese subjects,⁹ who exhibit lower acid secretion than Western patients.⁶

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BOOK REVIEWS

Colon Microbiota, Nutrition and Health. Edited by G R Gibson, M B Roberfroid (Pp 304; illustrated; £93.00). The Netherlands: Kluwer Academic Publishers, 1999. ISBN 0412798808

I was taught as a medical student that the major function of the colon was that of a storage organ. Since then premises about the colon have evolved and the complexities of colon function is much better understood, as

described by Gibson and Roberfroid's (editors) multiauthored book *Colon Microbiota, Nutrition and Health*.

Although the editors state that the purpose of the book is to overview current knowledge of the activities and functions of the gut microflora, the scope goes beyond these boundaries and takes us on an ecological journey into the exciting life of gut microflora and their impact on colon function in health and disease, and the intimate critical relationship between diet, bacteria, and quality of life.

Gastroenterologists are still recovering from the impact that a bacterium, *Helicobacter pylori*, has had on upper gastrointestinal tract pathology. In this context it is interesting to note that the large bowel is the most heavily colonised part of the gastrointestinal tract yielding up to 10¹² bacteria per gram of intestinal contents in healthy human subjects. It is a complex ecosystem in which the numerous and different species of bacteria degrade and ferment substrates that have escaped digestion in the small bowel. Major genera include bacteroides, bifidobacteria, lactobacilli, clostridia, and enterobacteria, and the main products of bacterial fermentation of the substrate that reaches the colon are short chain fatty acids (SCFA) and gases, including hydrogen, carbon dioxide, and in some individuals, methane. The relevance of SCFA is that they act as a source of energy for intestinal mucosal cells and reduce the pH of colonic contents. One particular SCFA, butyrate, may be important in protecting against colorectal cancer. The relevance of fermentation to human metabolism can be gauged from the fact that the energy equivalent of 15–40 g of carbohydrate is metabolised by the large bowel.

The book outlines the technological revolution that has occurred in understanding the natural microbial world. Molecular biology has invaded gut microbiology with the limitations of enrichment cultural techniques being integrated into techniques based on the detection of genomic DNA or analysis of rRNA.

A fascinating aspect of the book that concerns and affects all of us are the chapters on food. With the craze of low carbohydrate diets to counter obesity sweeping the USA, it is refreshing to realise the importance of carbohydrates and the concept of functional food. These foods target specific functions in the body in a positive way due to the presence of health enhancing ingredients. Colonic foods are an example of such functional foods that target the large intestine. These are foods that contain an ingredient that does not undergo significant modification during transit through the small intestine but reach the colon where they are utilised by the resident bacteria producing metabolites that influence the physiological and biochemical processes in a beneficial manner. Dietary fibre is the best known of the "colonic foods" and is divided into soluble and insoluble fibre. Soluble fibres include pectin, guar gum, B glucan, and psyllium, and result in modest reductions in blood lipids affecting total and LDL cholesterol fractions. Insoluble fibres (cellulose and lignin) are mainly responsible for faecal bulking. Dietary fibre may play a protective role in diverticular disease and colorectal cancer. Other functional foods are the fructans and resistant starch which, in animal models, affect triglyceride rich fractions. A novel and potentially important approach to prevention and therapy of

colonic diseases is the concept of prebiotics and probiotics. The probiotic approach involves adding live microorganisms to the gastrointestinal tract while prebiotics enhance certain components of the existing flora. Probiotics have potential in the prevention and treatment of rotavirus infections, lactose malabsorption, and food allergy. Tentative claims for benefits of prebiotics include reduction in obesity, improved control of non-insulin dependent diabetes, reduction in the risk of atherosclerotic cardiovascular disease, and prophylaxis of acute gastroenteritis.

How does the above affect individuals? It seems that we should include the following foods in our diet: garlic, onions, asparagus, chicory, dandelion, artichokes, soy beans, leeks, Jerusalem artichokes, wheat, bananas, and rye. Quite a tall order!

The authors have made an important contribution to the concept of local and systemic effects of the colon and outlined the benefits of a healthy colon and the involvement of the idea that functional foods have prophylactic and therapeutic properties. A minor criticism is that there is repetition of ideas in certain chapters. I would highly recommend this excellent work for gastroenterologists as a seminal study. This book should be used as a guide not only for gastroenterologists, primary care physicians, and nutritionists but also for all health workers.

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Advances in Inflammatory Bowel Diseases (Falk Symposium 106). Edited by P Rutgeerts, J-F Colombel, SB Hanauer, *et al* (Pp 318). The Netherlands: Kluwer Academic Publishers, 1999. ISBN 0 7923 8750 3.

The proceedings of medical and scientific meetings, when published, tend to be viewed more as trophies for the participants rather than referenced texts to be consulted at a later date. In this information age, such publications are seldom a first choice for those seeking specific information on selected topics and, even then, the readership is vanishingly small. The present text is therefore a surprise because it offers an excellent overview of recent advances in inflammatory bowel disease (IBD), and blends insights into pathogenetic mechanisms with new therapeutic approaches. As with most Falk symposia, the selection of authors is truly international and each is a leader in the field. Several of the chapters provide more than a review, and are actually quite useful in translating research information into clinical implications of practical value. This is particularly the case in chapters dealing with genetics, cytokines, steroid therapy, and cancer in IBD. The standard of writing is not uniform and, although six editors are listed, I doubt if any had significant editorial input to the chapters. The quality of the book relies therefore on the expertise of the authors which is impressive. What is remarkable is that such a large amount of information can be presented in a concise fashion in such a slim volume and in such a readable manner. I rarely recommend books of this nature for general readership but anyone seeking a concise pain free update and overview of the field would not go far wrong with this text.

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