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Edited by Clare J. Fowler, Jalesh N. Panicker and Anton Emmanuel

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Foreword

Excretory and sexual functions are mediated by the coordinated activity of multiple pelvic organs and by complex neural circuitry in the brain and spinal cord. Accordingly, injuries or diseases at various sites in the nervous system can produce prominent changes in micturition, defecation, and sexual activity. Thus basic knowledge of the neurobiology of the lower urinary tract, distal bowel, and sexual organs, which is provided in this book, is essential for urologists, gastroenterologists, neurologists, and urogynecologists who are caring for people with neurological disorders affecting the pelvic viscera.

The book is divided into three sections that contain: (1) comprehensive reviews of the neural control of the pelvic organs; (2) methods for evaluation and management of neurogenic disorders of individual organs; and (3) descriptions of the impact of specific conditions such as Parkinson's disease, multiple sclerosis, and spinal cord injury on pelvic organ functions. The book brings together diverse information from many basic science and medical disciplines, including neurophysiology, neuropharmacology, neurology, urology, and gastroenterology, allowing the reader to compare the pathophysiological mechanisms underlying neurogenic dysfunctions of the different organs. These comparisons can be useful clinically in evaluating neurogenic disorders, because the pelvic organs exhibit similar afferent and efferent innervations carried by autonomic and somatic nerves arising at the lumbosacral level of the spinal cord. The organs also exhibit common unique properties not shared by other visceral organs including: (1) complete dependence on central neural control; (2) functions such as, micturition, defecation, emission-ejaculation, that are initiated in an all-or-none, switch-like manner;

(3) functions requiring neurally mediated coordination between multiple smooth and striated muscles; and (4) voluntary control of micturition and defecation in contrast to the involuntarily control of other visceral functions.

The high quality of this book is attributable to the broad clinical and research expertise of the contributing authors, who are based in neurology, urology, gastroenterology, urogynecology, neurosurgery, and uro-neurology departments. This group of clinical scientists, which was organized by Professor Fowler at the National Hospital for Neurology and Neurosurgery, Queen's Square, London, is recognized internationally for its studies of the neural mechanisms underlying pelvic organ dysfunctions. Professor Fowler's laboratory has played a key role in identifying the pathophysiological mechanisms underlying overactive bladder symptoms and the mechanisms involved in idiopathic urinary retention in young women (Fowler's Syndrome). Professor Fowler's pioneering studies of intravesical vanilloid therapy established bladder afferent nerves as an important targets for drugs, and her studies of the effects of botulinum toxin and sacral neuromodulation identified mechanisms by which these therapies influence bladder function.

The experience of Professor Fowler's Uro-Neurology Department at Queen's Square in integrating basic and clinical research has clearly served as a model for the preparation of this excellent book, which efficiently links basic neuroscience information with the diagnosis and management of neurogenic pelvic organ dysfunctions.

William de Groat
University of Pittsburgh

Preface

This book has been edited and written by, and for, clinicians with a special interest in the management of bladder, bowel and sexual problems in neurological disease. Based soundly on knowledge of basic science, the first section outlines the separate neurological control of bladder, bowel and sexual function. The next section describes the investigation and generic management of each type of organ dysfunction, dealing predominantly with medical treatments, although a chapter on surgical interventions is included as well. Not attempted in any other single volume, a unique feature of the approach taken in this book is the description of the impact of neurological dysfunction on each pelvic organ.

The Department of Uro-Neurology was established at the National Hospital for Neurology and Neurosurgery, Queen Square, London 20 years ago and all the authors of this book have had a close association there, either contributing to its research

or developing the clinical service. Over this period much has been learnt from basic science as well as clinical studies about the neurological control of the pelvic organs and possible treatment of their disorders. *Pelvic Organ Dysfunction in Neurological Disease* brings together that knowledge in an easy-to-read text. Each chapter makes sense on its own but if the reader wants to know more, for example about the treatment of symptoms in a specific condition, they will find good internal referencing to the relevant chapter. The book is directed towards any healthcare professional managing patients in whom pelvic organ functions have been compromised by neurological disease. These patients present with complex pelvic organ symptoms, and it is our intention that the clinician who sees such a patient can now source helpful information from a single book, not separate textbooks on urology, gynecology, andrology and gastroenterology.