

# Practical Urodynamics for the Clinician



Andrew C. Peterson • Matthew O. Fraser  
Editors

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 Springer

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# Preface

Urodynamics have sometimes been considered to be confusing, ambiguous, and complex. However, with increasing improvements in technology, software, and equipment, this heretofore often perplexing series of tests has become significantly simplified for use by the clinician in today's busy urologic practice.

Many textbooks on this subject have relied heavily on long descriptions of the basic science of urodynamics and complex physiology. However, urodynamics in today's clinical world may produce very practical and clinically relevant data with significant impact on patient care. The objective of this book is to offer the reader a guide to the preparation, conduct, and interpretation of these studies in the everyday clinical scenario.

One must remember that the term urodynamics actually refers to a series of simple tests that are designed to be combined to produce useful information for a particular clinical situation. Very much like a high-performance race car engine is a complex and confusing machine, urodynamics can be thought of as a combination of multiple simple machines put together for a specific purpose. For instance, a radiator, a carburetor, fuel injector, and piston are all subcomponents of the complex car engine that when working in unison form a smooth well-running powerful device. In much the same manner, the urine flow, postvoid residual, cystometrogram, and EMG when combined together will give the clinician powerful data to apply to the specific clinical question at hand. It's also important to remember that one does not need to include all of the subcomponents in order to address a specific concern about a patient's complaint. For instance, one may only need noninvasive urodynamics (uroflow/postvoid residual) in one clinical scenario, while another may require a complex study with the combination of the cystometrogram, EMG, fluoroscopy, and pressure flow studies.

We have arranged this book into these components as outlined above. The book starts with a basic physiology section focusing on the relevant principles and equations needed for practical clinical urodynamics. The reader is then taken on a tour of all of the individual tools of urodynamics starting with noninvasive urodynamics, the cystometrogram, the pressure flow study, the EMG, and the use of fluoroscopy. In addition, we have included chapters with practical relevance to the clinician such as

a description of the type of equipment needed to start a urodynamics lab, the use of the currently available nomograms, and a chapter on the special population of children. With the goal of this being primarily a handbook for use by the clinician, there is not a lot of discussion within this textbook about specific diagnoses and treatment.

We hope that clinicians and current learners of urology such as residents and fellows will be able to obtain the required practical knowledge about equipment, the type of testing, and the performance of this testing to become proficient in this important study.

I sincerely appreciate all the hard work the authors have provided for this great textbook—they are all busy clinicians and pioneers in the field of both urodynamics and voiding dysfunction/incontinence. To Dr. George Webster, I owe an enduring debt of gratitude for his medical training, mentorship, and support throughout my time both running our urodynamics laboratory at Duke and in production of this textbook.

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