



**SECOND
EDITION**

APPLIED PATHOPHYSIOLOGY

*for the Advanced
Practice Nurse*

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Cover and Title Page Image: © Cavan Images/Getty Images
Printing and Binding: Lakeside Book Company

Library of Congress Cataloging-in-Publication Data

Names: Dlugasch, Lucie, author. | Story, Lachel, author.
Title: Applied pathophysiology for the advanced practice nurse / Lucie Dlugasch, Lachel Story.
Description: Second edition. | Burlington, Massachusetts : Jones & Bartlett Learning, [2024] | Includes bibliographical references and index.
Identifiers: LCCN 2022032187 | ISBN 9781284255614 (paperback)
Subjects: MESH: Pathology | Physiology | Advanced Practice Nursing | Nurses Instruction
Classification: LCC RB113 | NLM QZ 140 | DDC 616.07--dc23/eng/20221209
LC record available at <https://lccn.loc.gov/2022032187>

6048

Printed in the United States of America

27 26 25 24 23 10 9 8 7 6 5 4 3 2 1

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Preface

Pathophysiology is a critical foundational course for all nurses. Advanced pathophysiology is a core course that must be included in all graduate nursing curricula preparing nurses for direct care roles. These roles are varied and include nurse practitioners, nurse anesthetists, nurse midwives, clinical nurse specialists, and nurse educators. This text includes pathophysiology content across the life span and information to meet the needs of many advanced practice population areas, including pediatrics, psychiatric mental health, and gerontology. It also incorporates information from both an acute and primary care focus.

Many pathophysiology textbooks are geared toward undergraduate nursing students, and they often lack the requisite content and focus to prepare advanced practice nurses. Educators teaching this course often have to create their own supplementary materials to ensure their students are better prepared for their advanced practice roles. Even so, some of these supplementary books are unwieldy and contain too much information, and educators must often edit the content of these texts to make it more manageable and understandable. Without a dedicated pathophysiology text available for advanced practice nursing, students are often overwhelmed, and educators are frustrated when teaching this course. This text was developed with these issues in mind and takes a comprehensive yet concise approach to presenting the content.

This text was also developed with the awareness that even though graduate students have a foundation in pathophysiology they will have different experience levels. Often, students enter advanced pathophysiology courses with varying numbers of years since they took basic science and undergraduate nursing courses. This text is intended to serve as a bridge between their basic education and clinical experience and the advanced knowledge necessary for their new advanced roles. Concepts in pathophysiology can be difficult to understand and remember. In this text, concept descriptions are repeated several times within a chapter and between different chapters. As an example, there is an extensive discussion pertaining to osmosis in the

cellular function chapter. The concept of osmosis is then briefly described again when discussing the process in the vascular and renal systems. This repetition serves as a prompt for students to remember and see concepts in different contexts, disorders, and practice situations.

Advanced pathophysiology is usually one of the courses students must take in the beginning of their academic programs. This text was written in a format so that students can start to transition into their new roles and learn to think like an advanced practice nurse. Advanced practice nurses must have the ability to understand and compare and contrast presenting signs and symptoms, and then discern between one diagnosis and another. Choices must then be made pertaining to necessary diagnostic tests, and treatment plans need to be developed. The text contains information and examples that are presented in a way that helps students to begin mastering these competencies. In each chapter, there are several Application to Practice activities. Within these application activities are case studies that I have developed from real-life scenarios accumulated from 38 years as a practicing nurse (27 of those as an advanced practice registered nurse) and educator. These cases represent common encounters an advanced practice nurse may face in practice. Some of the cases were developed by other faculty who are also expert practicing clinicians and educators. The content in the cases is concise, mimicking typical clinical encounters. These shorter cases allow students to practice what they just read and help them gain understanding and confidence. Several of the application activities have multiple cases that have common features, yet the diagnosis or clinical manifestations may be different. These activities allow the students to develop the knowledge necessary to differentiate between clinical presentations, pathogenesis, diagnosis, and treatment. If disorders are disproportionate in a specific ethnic group a discussion of the possible rationales from a physiologic perspective is discussed.

The chapters are written in a format that provides students with information pertaining to the

most common scenario and likely underlying disorder. Chapters are organized with overarching concepts and disorders are organized by underlying pathophysiologic processes. Disorders that have a common presentation are discussed in a common section, because patients come in with concerns and clinical manifestations, not diagnoses. The grouping of common presentations with varying diagnoses is another technique to help students think like an advanced practice nurse and develop critical thinking skills. As an example, when a patient is complaining of a sore throat, the various possible diagnoses can include viral pharyngitis, streptococcal pharyngitis, and infectious mononucleosis. Infectious mononucleosis in other texts is often discussed in hematology chapters, and in this text, it is discussed with other common pharyngitis causes. Providing information in this format sets the stage for future courses and clinical encounters where students need to establish a diagnosis based on a patient's presentation. Tables are also provided to help students understand differentiation between disorders.

Diagnostic Links are another tool found throughout each chapter. These Diagnostic Links provide the student with a background for commonly used diagnostic tests in practice. The links are strategically placed in the chapter where content pertaining

to the diagnostic test was just discussed to maximize understanding. As examples, a reticulocyte count is discussed with a description of hematopoiesis and clotting studies are discussed with hemostasis.

The strength of this text is that the content is written in a format that links together multiple concepts from an applied pathophysiologic perspective—a style that is often lacking in other pathophysiology texts. This text is written to answer the how, when, and why to how things can go wrong, along with guidelines for diagnosis and treatment. With this practical approach to discussing the complex topic of pathophysiology, the student will gain confidence and be prepared to make sound decisions.

Sources

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New to this Edition

This second edition of this text features an expanded across the life span content, additional Application to Practice cases and Diagnostic Links. Emerging Research has been incorporated to provide the latest evidence for selected topics. Additional images and tables have been added to enhance understanding and explanation of complex topics and to be able to compare

and contrast concepts. New material includes a robust section on microbiology and infectious diseases, including detailed information regarding COVID-19. The genetics section has been enhanced to include genetic testing principles. The psychiatric mental health section includes a discussion of additional disorders, such as personality and substance use disorders.



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*Thank you to all who participated in the revision
review for this new edition.*



Acknowledgments

I would like to thank my husband, Philip, for supporting me during all my career endeavors such as writing this book. You are not only my husband but are also my best friend and are one of the most passionate fellow nurse practitioners I know. Thank you for reviewing many sections in this book. The personal sacrifices you have made for me are immeasurable and have been noticed, and for this I am so grateful. To my daughters, Nicole and Lauren, I thank you for your words and gestures of encouragement and pushing me along the way when I was tired and doubted myself. To Analise, my daughter in heaven who now lives as an eternal part of my soul, I was able to find inspiration in my memories of how passionately you lived your life. I was also fueled by the drive and dedication you displayed in all your pursuits. To my friends and colleagues, thank you for listening and instilling confidence in my abilities. To my mom and stepdad, thanks for picking up the pieces, bringing me food, helping me with the house and just always being there for me; I am lucky to be the recipient of your tireless generosity. I love you both so much. To all my students, I am happiest when I am with you in the classroom. Our discussions, even the contentious ones, energize me and remind me how in health care, information is always evolving and learning is

lifelong. Although we may become weary, we must never rest, as we are charged and entrusted with caring for the most important thing in life and that is the health of others.

A big thank you to Lachel Story, my coauthor, who enabled me to embark on this journey, provided much encouragement, and guided me along the way. I am also thankful to the team at Jones & Bartlett Learning who were supportive and flexible with me throughout this process.

—Lucie Dlugasch

First, I would like to thank my husband, Tom, and children, Clayton and Mason, for their never-ending love and encouragement. I would also like to express my deepest gratitude to my mom, Carolyn, and dad, Tommy, because I would not be who I am today without them. I would also like to acknowledge all my students past, present, and future for constantly teaching me more than I could ever teach them and for all their feedback—I heard it and I hope this is more what you had in mind. Finally, I would like to convey my appreciation to my colleagues for their gracious mentoring and support.

—Lachel Story

