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1. THE FOUNDATIONAL CONCEPTS OF CLINICAL PRACTICE

Nancy C. Tkacs, Linda L. Herrmann, Randall L. Johnson, and Loretta A. Sernekos

PATHOPHYSIOLOGY AND THE PROCESS OF CLINICAL DECISION-MAKING

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2. CHEMICAL AND BIOCHEMICAL FOUNDATIONS

Gioia Petrighi Polidori

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3. MOLECULAR BIOLOGY, GENETICS, AND GENETIC DISEASES

Sheila A. Alexander and Michael J. Groves

THE CLINICAL CONTEXT INFORMATION TRANSMISSION WITHIN CELLS AND BETWEEN CELL AND HUMAN GENERATIONS

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Nancy C. Tkacs, Fruzsina K. Johnson, Robert A. Johnson, and Spencer A. Rhodes

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5. INFECTIOUS DISEASE

Ross S. Johnson, Jennifer Bailey, and Roseann Velez

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Elizabeth Walsh, Candace Kastner, and Alyssa Bondy

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CASE STUDY 5.1 A Patient With Acute HIV Infection Sampath Wijesinghe



CASE STUDY 5.2 A Child With Hand, Foot, and Mouth Disease *Stephanie L. Carper*



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References Suggested Resources

6. THE IMMUNE SYSTEM AND LEUKOCYTE FUNCTION

Jo Kirman and Raffaela Ghittoni

THE CLINICAL CONTEXT ROLE OF THE IMMUNE SYSTEM INTRODUCTION TO HOST DEFENSESS

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Nancy C. Tkacs

Immune Cellular Senescence and Disease

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CASE STUDY 6.1 <u>A Patient With Allergic Rhinitis</u> Linda W. Good



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7. NEOPLASIA

Kolbrun (Kolla) Kristjansdottir, Thomas M. Bodenstine, and Sandhya Noronha

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Theresa Kyle

Overview of Pediatric Cancer Leukemias Bone Tumors Nervous System Tumors

GERONTOLOGICAL CONSIDERATIONS

Rita M. Jakubowski and Janet H. Van Cleave

<u>Physiological Processes of Aging that May Promote Cancer</u> <u>Development</u>

Aging and Cancer: Practice Implications



<u>CASE STUDY 7.1</u> <u>A Patient With Breast Cancer</u> Beth Boyer



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<u>8.</u> BLOOD AND CLOTTING

Allison Rusgo, Megan E. Schneider, Daniela Livingston, and Patrick C. Auth

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Stephanie L. Carper

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Linda L. Herrmann

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<u>CASE STUDY 8.1</u> <u>A Patient With Pernicious Anemia</u> *Allison Rusgo*



CASE STUDY 8.2 <u>A Patient With Deep Venous Thrombosis</u> Allison Rusgo and Michelle Zappas



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9. CIRCULATION

Fruzsina K. Johnson, Robert A. Johnson, and Spencer A. Rhodes

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Randall L. Johnson

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Susan Krekun and Linda L. Herrmann

Vascular Changes with Aging Aging-Associated Vascular Disorders



<u>CASE STUDY 9.1</u> <u>A Patient With Hypertension</u> David A. Roberts and Michelle Zappas



CASE STUDY 9.2 <u>A Patient With Edema</u> David A. Roberts and Michelle Zappas



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<u>10. HEART</u>

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Fruzsina K. Johnson, Robert A. Johnson, and Spencer A. Rhodes

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<u>Mage 2018</u> Mage 2 Mage 2Mage 2Ma

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Fruzsina K. Johnson, Robert A. Johnson, Spencer A. Rhodes, and Mary B. Mehta

Normal Cardiac Development

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Susan Krekun

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<u>CASE STUDY 10.1</u> <u>A Patient With Heart Failure Symptoms</u>

Lisa Rathman



<u>CASE STUDY 10.2</u> <u>A Patient With Angina</u>

David A. Roberts



<u>CASE STUDY 10.3</u> <u>A Patient With Atrial Fibrillation</u>

Linda W. Good



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<u>11. LUNGS</u>

Nancy C. Tkacs, Charrell S. Porter, and Nicholas A. Barker

THE CLINICAL CONTEXTOVERVIEW OF LUNG STRUCTURE AND FUNCTIONStructures of the Respiratory SystemMechanisms of RespirationAnatomy and Histology of Airways and AlveoliMechanisms of Lung ProtectionCystic Fibrosis: A Genetic Disorder that Compromises Lung
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Randall L. Johnson

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Stephanie L. Carper



<u>CASE STUDY 11.2</u> <u>A Patient With Chronic Bronchitis</u>

Linda W. Good



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12. KIDNEYS

Connie B. Scanga and Nancy C. Tkacs

THE CLINICAL CONTEXT **OVERVIEW OF KIDNEY STRUCTURE AND FUNCTION** The Kidney and Homeostasis **Overview of Body Fluid Compartments** Water: The Solvent of Body Fluids **Distribution of Fluids in the Body** Water Movement Between Fluid Compartments **Kidney Structure Nephron Structure Glomerular Function** Glomerular Vascular Structure and Glomerular Filtration **Barriers** Peritubular Capillary Reabsorption and Secretion Understanding Renal Clearance and Glomerular Filtration Rate **Main Stress 1 and 2 GLOMERULAR INJURIES Glomerular Injury by Immune Mechanisms Diabetic Nephropathy Hypertensive** Nephropathy **Main Stress Barry Constitutions 3 and 4 REGULATION OF RENAL BLOOD FLOW AND GLOMERULAR FILTRATION RATE**

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Kim Zuber and Jane S. Davis



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Amanda Chaney and Michelle Zappas



CASE STUDY 13.2 A Teenage Boy With Celiac Disease

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Jennifer Andres, Adam Diamond, Kimberly A. Miller, Nicole E. Omecene, and Dusty Lisi

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Amanda Chaney and Michelle Zappas



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Nancy C. Tkacs, Peggy A. Compton, and Kara Pavone

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Linda W. Good



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Allison Rusgo and Michelle Zappas



CASE STUDY 16.2 A Patient With Acute Gouty Arthritis

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17. ENDOCRINE SYSTEM

Christine Yedinak, Carolina R. Hurtado, Angela M. Leung, Meredith Annon, Hanne S. Harbison, Diane L. Spatz, Gioia Petrighi Polidori, and Victoria Fischer

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Kimberly K. Trout



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