diagram of pulmonary and systemic circulation

Diagram of Pulmonary and Systemic Circulation: Understanding the Heart’s Lifelines

diagram of pulmonary and systemic circulation provides a clear and visual way to understand one of the most fundamental processes that sustain human life: the continuous movement of blood throughout the body. These two circulatory loops—the pulmonary and systemic—work in harmony to deliver oxygen, remove carbon dioxide, and maintain the overall health of tissues and organs. By exploring the diagram of pulmonary and systemic circulation, we gain insight into how the heart, lungs, and blood vessels collaborate in this vital task.

The Basics of Circulatory Loops: Pulmonary vs. Systemic

At the core of the cardiovascular system are two distinct yet interconnected circuits: the pulmonary circulation and the systemic circulation. Each serves a specific function and involves different pathways for blood flow.

What is Pulmonary Circulation?

Pulmonary circulation refers to the route blood takes from the heart to the lungs and back again. This loop’s primary goal is gas exchange: blood picks up oxygen and releases carbon dioxide in the lungs.

The journey starts in the right ventricle of the heart, which pumps deoxygenated blood into the pulmonary arteries. These arteries transport the blood to the lungs, where oxygen is absorbed into the bloodstream through tiny structures called alveoli. Once oxygenated, the blood returns to the heart’s left atrium via the pulmonary veins, completing this pulmonary loop.

Understanding Systemic Circulation

Systemic circulation carries oxygen-rich blood from the heart to all the tissues and organs of the body, then returns deoxygenated blood back to the heart. This loop begins in the left ventricle, which pumps oxygenated blood into the aorta, the body’s main artery.

From the aorta, blood travels through a vast network of arteries, arterioles, and capillaries, delivering oxygen and nutrients to cells throughout the

body. After the exchange of gases and nutrients, deoxygenated blood collects into venules and veins, eventually returning to the heart’s right atrium via the superior and inferior vena cava.

Exploring the Diagram of Pulmonary and Systemic Circulation

A well-constructed diagram of pulmonary and systemic circulation typically illustrates the heart at the center, with clearly marked pathways showing blood flow directions, oxygenation status, and critical vessels involved.

Key Components Highlighted in the Diagram

- **Heart Chambers:** Right atrium, right ventricle, left atrium, and left ventricle.
- **Major Vessels:** Pulmonary arteries and veins, aorta, superior and inferior vena cava.
- **Blood Flow Arrows:** Often color-coded—blue for deoxygenated blood and red for oxygenated blood—to visually distinguish the two circuits.
- **Lungs:** Situated adjacent to the heart, indicating where gas exchange occurs.
- **Capillary Networks:** Represented in systemic circulation to show nutrient and gas exchange at the tissue level.

This visual aid not only clarifies the path of blood but also helps learners appreciate the heart’s dual-pumping action and the importance of oxygenation.

Why Understanding These Circulations Matters

Knowing the diagram of pulmonary and systemic circulation is essential for students, healthcare professionals, and anyone interested in human biology because it:

- **Demonstrates Heart Function:** The heart is a double pump, sending blood to two different circuits, which is critical for maintaining efficient circulation.
- **Explains Oxygen Transport:** Understanding how oxygen reaches tissues helps explain symptoms related to cardiovascular or respiratory diseases.
- **Aids in Diagnosing Conditions:** Many heart and lung conditions affect either pulmonary or systemic circulation; knowing these pathways helps in clinical reasoning.
- **Enhances Learning of Related Systems:** Circulation is intertwined with respiratory, nervous, and endocrine systems; grasping these basics sets a foundation for more complex topics.

Tips for Studying Circulatory Diagrams

Approaching the diagram of pulmonary and systemic circulation can be overwhelming at first, but a few strategies help:

- **Follow the Flow:** Trace the blood’s journey step-by-step, noting oxygenated vs. deoxygenated stages.
- **Use Color Coding:** If your diagram isn’t pre-colored, add your own—this visual aid reinforces learning.
- **Relate to Physiology:** Connect each part of the diagram to its functional role, like how the lungs oxygenate blood or how the aorta distributes it.
- **Draw Your Own:** Reproducing the diagram by hand can deepen understanding and memory retention.

Common Misconceptions Cleared Up by the Diagram

Many people mistakenly believe the heart pumps only oxygenated blood or that veins always carry deoxygenated blood. The diagram of pulmonary and systemic circulation helps clarify such misunderstandings:

- **Veins and Arteries Are Defined by Direction, Not Oxygen Content:** Pulmonary arteries carry deoxygenated blood to the lungs, unlike systemic arteries, which carry oxygenated blood.
- **The Heart’s Right Side Deals with Deoxygenated Blood:** The right atrium and ventricle handle blood returning from the body, sending it to the lungs.
- **The Left Side Pumps Oxygenated Blood:** After the lungs oxygenate the blood, it enters the left atrium and ventricle before being pumped systemically.

Understanding these distinctions is crucial for grasping cardiovascular physiology in health and disease.

How Pulmonary and Systemic Circulation Work Together

Despite being two separate circuits, pulmonary and systemic circulation are interdependent. One cannot function without the other because:

- Pulmonary circulation re-oxygenates blood, which systemic circulation needs to supply organs.
- Systemic circulation delivers carbon dioxide-rich blood back to the lungs for removal.
- The heart coordinates both by contracting in a synchronized manner, ensuring continuous blood flow.

The diagram of pulmonary and systemic circulation often shows this relationship by positioning the lungs and heart centrally, with vessels looping between them and the rest of the body.

Impact of Diseases on Circulatory Loops

Various conditions can disrupt these circuits, and understanding the diagram aids in grasping their effects:

- **Pulmonary Hypertension:** Increased pressure in pulmonary arteries affects right ventricular function.
- **Atherosclerosis:** Narrowing of systemic arteries reduces oxygen delivery to tissues.
- **Congenital Heart Defects:** Abnormal connections between the two circuits can impair oxygenation.
- **Heart Failure:** Impaired pumping affects both pulmonary and systemic circulation, leading to symptoms like edema and breathlessness.

By visualizing the pathways, one can better comprehend how such diseases impact blood flow.

Integrating the Diagram into Learning and Practice

For medical students, nurses, and educators, the diagram of pulmonary and systemic circulation serves as a foundational tool. It can be used in:

- **Classroom Lectures:** To explain the cardiovascular system’s anatomy and physiology.
- **Clinical Training:** To correlate symptoms with circulatory dysfunction.
- **Patient Education:** Simplified diagrams help patients understand their conditions.
- **Research and Innovation:** Understanding circulation helps in developing treatments like artificial hearts or lung assist devices.

Incorporating dynamic or interactive diagrams can further enhance engagement and retention.

The diagram of pulmonary and systemic circulation is more than just a static image—it’s a roadmap to understanding life’s essential flow. Whether you’re diving into biology for the first time or seeking to deepen your medical knowledge, appreciating this circulatory dance enriches your perspective on how the body sustains itself every moment.

Frequently Asked Questions

What is the main difference between pulmonary and systemic circulation in the diagram?

Pulmonary circulation carries deoxygenated blood from the right side of the heart to the lungs for oxygenation, while systemic circulation carries oxygenated blood from the left side of the heart to the rest of the body.

How is the flow of blood represented in a diagram of pulmonary and systemic circulation?

In such diagrams, arrows typically indicate the direction of blood flow: from the heart to the lungs and back in pulmonary circulation, and from the heart to body tissues and back in systemic circulation.

Which chambers of the heart are involved in pulmonary circulation according to the diagram?

The right ventricle pumps deoxygenated blood into the pulmonary arteries to the lungs, and the left atrium receives oxygenated blood from the pulmonary veins during pulmonary circulation.

What vessels are highlighted in the pulmonary circulation part of the diagram?

The pulmonary arteries, which carry deoxygenated blood to the lungs, and the pulmonary veins, which carry oxygenated blood back to the heart, are highlighted in pulmonary circulation diagrams.

How does systemic circulation appear in a typical diagram of the circulatory system?

Systemic circulation is shown as the pathway where oxygenated blood is pumped from the left ventricle through the aorta to the body, and deoxygenated blood returns to the right atrium via the superior and inferior vena cava.

Why are color codes used in diagrams of pulmonary and systemic circulation?

Color codes, such as blue for deoxygenated blood and red for oxygenated blood, are used to visually differentiate the two types of blood and clarify the pathways in pulmonary and systemic circulation.

What role do capillaries play in the systemic circulation diagram?

Capillaries in systemic circulation are where oxygen and nutrients are exchanged for carbon dioxide and waste products between blood and body tissues.

How does the diagram illustrate the oxygenation process in pulmonary circulation?

The diagram shows blood moving from the right ventricle to the lungs via pulmonary arteries, where it becomes oxygenated, then returning to the left atrium through pulmonary veins.

What is the significance of the heart's two pumps as depicted in the pulmonary and systemic circulation diagram?

The heart acts as two pumps: the right pump sends blood to the lungs for oxygenation (pulmonary circulation), and the left pump sends oxygen-rich blood to the body (systemic circulation), as illustrated in the diagram.

Additional Resources

Diagram of Pulmonary and Systemic Circulation: An In-Depth Analysis of the Cardiovascular Pathways

diagram of pulmonary and systemic circulation serves as a foundational concept in understanding the complex workings of the human cardiovascular system. This bifurcated circulation network ensures the efficient oxygenation of blood and its distribution throughout the body, underpinning vital physiological processes. By exploring the anatomy, pathways, and functional distinctions illustrated in these diagrams, medical professionals, students, and researchers gain critical insights into cardiovascular health and disease mechanisms.

Understanding the Diagram of Pulmonary and Systemic Circulation

At its core, the diagram of pulmonary and systemic circulation visually distinguishes the two primary circuits through which blood flows in the body. Pulmonary circulation is responsible for transporting deoxygenated blood from the heart to the lungs and returning oxygen-rich blood back to the heart, while systemic circulation distributes this oxygenated blood from the heart

to the various tissues and organs before returning deoxygenated blood to the heart.

This dual-loop system is elegantly represented in most medical illustrations, using color coding—commonly blue for deoxygenated blood and red for oxygenated blood—to clearly denote the flow direction and the oxygenation status of blood within each segment.

Key Features of Pulmonary Circulation

Pulmonary circulation begins at the right ventricle, where deoxygenated blood is pumped through the pulmonary valve into the pulmonary artery. Unlike other arteries, the pulmonary artery carries blood low in oxygen content. The artery branches into left and right pulmonary arteries that lead to the corresponding lungs. Here, the blood undergoes gas exchange in the pulmonary capillaries, releasing carbon dioxide and absorbing oxygen.

The oxygen-rich blood then flows into the pulmonary veins, which uniquely carry oxygenated blood back to the left atrium of the heart. This circuit is relatively short and operates under lower pressure compared to systemic circulation, reflecting the delicate structure of lung tissue and the necessity to prevent pulmonary edema.

Key Features of Systemic Circulation

Systemic circulation originates from the left ventricle, where oxygenated blood is forcefully pumped into the aorta, the body's largest artery. From the aorta, blood branches into smaller arteries, arterioles, and eventually capillaries that permeate every tissue. This extensive network facilitates the delivery of oxygen and nutrients to cellular structures while collecting metabolic waste and carbon dioxide.

After the exchange, deoxygenated blood returns to the heart via venules and veins, culminating in the superior and inferior vena cavae, which empty into the right atrium. Unlike pulmonary circulation, systemic circulation operates at higher pressures to overcome the resistance presented by the widespread vascular beds throughout the body.

Comparative Analysis of Pulmonary and Systemic Circulation

Examining the diagram of pulmonary and systemic circulation reveals several critical contrasts and similarities that shape cardiovascular function:

- **Blood Oxygenation:** Pulmonary circulation transports deoxygenated blood to the lungs and returns oxygenated blood; systemic circulation carries oxygenated blood to the body and returns deoxygenated blood.
- **Pressure Levels:** Pulmonary circulation functions at a lower pressure (mean pulmonary artery pressure ~15 mm Hg) to accommodate the delicate pulmonary capillaries, whereas systemic circulation operates at higher pressures (mean arterial pressure ~93 mm Hg) to effectively perfuse the entire body.
- **Vessel Structure:** Pulmonary arteries and veins have thinner walls relative to systemic arteries and veins, reflecting their pressure differences and functional demands.
- **Pathway Length:** Systemic circulation encompasses a much longer and more complex vascular network compared to the relatively short pulmonary circuit.

These distinctions are vital for clinicians when interpreting diagnostic images or assessing pathological conditions such as pulmonary hypertension or systemic arterial diseases.

The Role of Heart Chambers in Circulation

The heart acts as the central pump, coordinating the two circulation loops. The right atrium receives deoxygenated blood from systemic veins and channels it into the right ventricle, which initiates pulmonary circulation. Conversely, oxygenated blood enters the left atrium from pulmonary veins and flows into the left ventricle, which propels it into systemic circulation.

The diagram of pulmonary and systemic circulation often highlights this anatomical arrangement, emphasizing the septum that prevents mixing of oxygenated and deoxygenated blood, a critical feature for maintaining efficient gas exchange and nutrient delivery.

The Clinical Significance of Circulation Diagrams

Medical education and cardiology practice rely heavily on accurate and detailed diagrams of pulmonary and systemic circulation. These visual tools aid in diagnosing cardiovascular disorders, planning surgical interventions, and understanding congenital anomalies such as septal defects or patent ductus arteriosus.

Moreover, advancements in imaging techniques—like echocardiography and

cardiac MRI—have enhanced the visualization of these circulatory pathways in vivo, providing dynamic insights beyond static diagrams. This integration of imaging and diagrammatic representation improves patient outcomes by enabling precise localization and characterization of pathologies.

Educational Applications and Enhancements

Educationally, diagrams of pulmonary and systemic circulation serve as foundational illustrations in anatomy, physiology, and pathology curricula. Their clarity assists learners in grasping complex physiological concepts, such as the oxygenation cycle and hemodynamic principles.

To enhance comprehension, modern educational platforms incorporate interactive diagrams, 3D models, and animation that simulate blood flow dynamics. These tools allow users to visualize pressure changes, valve functions, and the impact of diseases on circulation, thereby deepening understanding and retention.

Integrating Diagrams with Broader Cardiovascular Physiology

While the diagram of pulmonary and systemic circulation primarily focuses on blood flow paths and oxygenation, it also connects with broader cardiovascular physiology aspects, including:

- **Cardiac Output:** The volume of blood the heart pumps per minute, influenced by stroke volume and heart rate, directly affects both circulations’ efficacy.
- **Vascular Resistance:** Systemic vascular resistance regulates blood pressure and flow distribution, while pulmonary vascular resistance impacts gas exchange efficiency.
- **Autonomic Regulation:** Sympathetic and parasympathetic inputs modulate heart rate and vessel tone, thereby influencing circulation patterns depicted in diagrams.

Understanding these interrelations enriches the practical utility of circulation diagrams in clinical diagnostics and therapeutic planning.

The diagram of pulmonary and systemic circulation remains an indispensable educational and clinical tool that encapsulates the dual pathways essential for sustaining life. Its detailed portrayal of structural and functional nuances continues to support advances in cardiovascular medicine and

education.

Diagram Of Pulmonary And Systemic Circulation

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diagram of pulmonary and systemic circulation: Structure & Function of the Body - E-Book Kevin T. Patton, Frank B. Bell, Terry Thompson, Peggie L. Williamson, 2024-06-25 Gain a solid foundation in A&P with this easy-to-understand text! Clear and straightforward, Structure & Function of the Body, 17th Edition introduces the typical structure and function of the human body and describes what the body does to maintain homeostasis. The book shows how structure fits function, using clinical examples to reinforce A&P concepts and featuring hundreds of photos and micrographs for realistic visual detail. Written by a team of experts led by Kevin Patton, this text includes an Evolve website packed with animations, audio pronunciations, review questions, and other interactive learning resources. - NEW! Updated content is added, and new line art and photos ensure wider representation of skin color, sex, age, body type, and cultural diversity. - NEW! Inclusive terminology reduces the emphasis on eponyms — for example, the term normal is more carefully used to avoid implying that healthy conditions outside the average are abnormal. - NEW! The latest scientific thinking introduces or expands upon emerging core concepts such as the human microbiome, with a new diagram illustrating the changes in the microbiome throughout the human life cycle. - Clear, conversational writing style is paired with chunked content, which breaks down the material into smaller, bite-sized bits of information that are easier to read and understand. - More than 400 full-color photos, micrographs, and drawings illustrate the diversity and detail of the human body. - Language of Science and Medicine lists in each chapter includes key terms, pronunciations, and word parts to highlight new or complex medical terminology. - NEW! Updated Connect It! boxes refer you to articles on Evolve that integrate concepts and discuss the latest clinical developments and scientific research, showing the big picture of human structure and function. - NEW! Updated Science Application boxes discuss possible career paths within the context of a diversity of historical figures and their life stories. - NEW! Quick Guide to the Language of Science and Medicine is added to Evolve, helping you learn medical terminology without the need for a separate textbook. - UNIQUE! 22-page Clear View of the Human Body insert allows you to peel back the layers of the human body, both male and female, by flipping through full-color, semi-transparent pages. - Student-friendly features make learning easier with chapter outlines, chapter objectives, key terms, study hints, frequent Quick Check questions, chapter summaries, review questions, critical thinking questions, chapter tests, and more. - Boxed sidebars include Health and Well-Being, Clinical Application, Research, Issues, and Trends, and Science Applications

to help you apply concepts and develop critical thinking skills. - Resources on the Evolve website include animations, audio summaries, audio pronunciations, the Body Spectrum anatomy coloring book, review questions, and FAQs with answers from the authors.

diagram of pulmonary and systemic circulation: *X-kit Anatomy* , 2006

diagram of pulmonary and systemic circulation: The Human Body in Health & Disease - E-Book Kevin T. Patton, Frank B. Bell, Terry Thompson, Peggie L. Williamson, 2023-01-03 Completely revised and updated, The Human Body in Health & Disease, 8th Edition makes it easier to understand how the body works, both in typical conditions and when things change. Its easy-to-read writing style, more than 500 full-color illustrations, and unique Clear View of the Human Body transparencies keep you focused on the principles of anatomy, physiology, and pathology. Key features are Connect It! with bonus online content, concept maps with flow charts to simplify complex topics, and chapter objectives and active learning sections. From noted educator Kevin Patton, this book presents A&P in a way that lets you know and understand what is important. - More than 500 full-color photographs and drawings illustrate the most current scientific knowledge and bring difficult concepts to life. The beautifully rendered illustrations are unified by a consistent color key and represent a diversity of human identity. - A conversational writing style is paired with chunked content, making it easy to read and comprehend. - UNIQUE! Creative page design uses color backgrounds to organize information in a more inviting, accessible, and motivating way to enhance learning. - UNIQUE! The full-color, semi-transparent Clear View of the Human Body permits the on-demand virtual dissection of typical male and female human bodies along several body planes. This 22-page insert contains a series of transparencies that allows you to peel back the layers of the body anterior-to-posterior and posterior-to-anterior. - Language of Science/Language of Medicine word lists at the beginning of chapters present key terms, pronunciations, and word-part translations to help you become familiar with new and complex terminology. - Animation Direct feature throughout the text guides you to state-of-the-art animations on the companion Evolve website to provide dynamic visual explanations of key concepts. - Active Concept Maps offer animated, narrated walk-throughs of concept maps to clarify the text narrative and provide you with clear examples of how to build your own concept maps.

diagram of pulmonary and systemic circulation: Introducing Pharmacology Roger McFadden, Patricia Fell, 2024-09-17 This fourth edition of Introducing Pharmacology provides an accessible and engaging introduction to the subject of pharmacology for nursing and healthcare students – in fact any healthcare professional needing to refresh their knowledge of this important area. The fourth edition has been fully updated to include recently introduced drugs and a completely new chapter that takes the reader through the process of drug development and the clinical trials that are required before a drug is licensed for prescribing to patients. Acknowledging the COVID pandemic of 2020/21, a review of the vaccines and drugs used against coronavirus (SARS-CoV-2) is included in this edition. This popular text includes: Clear explanations of how drugs work in the human body The underlying physiology and pathophysiology necessary for an understanding of the action of drugs Coverage of the common drug groups that nurses and other healthcare professionals are likely to encounter in practice Case-studies relating pharmacological theory to clinical practice 'Beyond the basics'. A feature providing an in-depth explanation of the mechanism of action of key drugs. Useful for students studying at a more advanced level New to this edition: A new chapter explaining how drugs are developed and undergo testing in clinical trials. This chapter also includes a section on the critical analysis of clinical trials and a brief explanation of the statistics used to present trial data An expanded chapter on pharmacokinetics, including the effect of renal and hepatic insufficiency on drug metabolism, and the new science of pharmacogenomics – the matching of drugs to patients, based on their individual genetics A new section on common skin complaints, psoriasis, eczema and the drugs used to treat them An expanded section on post-menopausal problems and the drugs used to alleviate symptoms Updated content that reflects the latest guidelines and recently licensed drugs This textbook is an essential companion for nursing, midwifery students and other healthcare professions, as well as those on

post-registration courses, studying to become independent prescribers.

diagram of pulmonary and systemic circulation: Introducing Pharmacology for Nursing and Healthcare Roger McFadden, 2009 Pharmacology concerns all practitioners of medicine and is essentially the science of drugs. It calls for the use of techniques from many other fields, such as biochemistry, statistics, and epidemiology, and can therefore prove to be a challenging subject. Introducing Pharmacology has been specially written for nursing and healthcare professionals, both trainees and qualified practitioners. The book provides an easy to understand introduction to Pharmacology that nursing and healthcare professionals will find relevant from the beginning of clinical training at the hospital, and afterwards in medical practice.

diagram of pulmonary and systemic circulation: Anatomy and Physiology of Domestic Animals R. Michael Akers, D. Michael Denbow, 2013-07-03 Anatomy and physiology are key foundational areas of study for animal science students and professionals. Understanding these guiding principles will provide students with a better understanding of complex make-up of domestic animals and continued success in further study in this field. Anatomy and Physiology of Domestic Animals provides a thorough, systems-based introduction to anatomy and physiology of a wide range of domestic animal species. Each chapter is highly illustrated to provide useful examples of concepts discussed.

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diagram of pulmonary and systemic circulation: Pulmonary Vascular Disease Jess Mandel, Darren Taichman, 2006 Offers a current and comprehensive review of the pathophysiology, diagnosis, and treatment of pulmonary hypertension and venous thromboembolism. Discusses indepth the pharmacologic and non-pharmacologic therapies used in the treatment of pulmonary vascular disease -- including the benefits and risks of each -- allowing for more informed care decisions.

diagram of pulmonary and systemic circulation: ,

diagram of pulmonary and systemic circulation: Structure & Function of the Body - Softcover Kevin T. Patton, Gary A. Thibodeau, 2015-11-17 Mastering the essentials of anatomy, physiology, and even medical terminology has never been easier! Using simple, conversational language and vivid animations and illustrations, Structure & Function of the Body, 15th Edition walks readers through the normal structure and function of the human body and what the body does to maintain homeostasis. Conversational and clear writing style makes content easy to read and understand. Full-color design contains more than 400 drawings and photos. Clear View of the Human Body is a unique, full-color, semi-transparent insert depicting the human body (male and female) in layers. Animation Direct callouts direct readers to Evolve for an animation about a

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diagram of pulmonary and systemic circulation: The Ecology and Behavior of Amphibians Kentwood D. Wells, 2010-02-15 Consisting of more than six thousand species, amphibians are more diverse than mammals and are found on every continent save Antarctica. Despite the abundance and diversity of these animals, many aspects of the biology of amphibians remain unstudied or misunderstood. The Ecology and Behavior of Amphibians aims to fill this gap in the literature on this remarkable taxon. It is a celebration of the diversity of amphibian life and the ecological and behavioral adaptations that have made it a successful component of terrestrial and aquatic ecosystems. Synthesizing seventy years of research on amphibian biology, Kentwood D. Wells addresses all major areas of inquiry, including phylogeny, classification, and morphology; aspects of physiological ecology such as water and temperature relations, respiration, metabolism, and energetics; movements and orientation; communication and social behavior; reproduction and parental care; ecology and behavior of amphibian larvae and ecological aspects of metamorphosis; ecological impact of predation on amphibian populations and antipredator defenses; and aspects of amphibian community ecology. With an eye towards modern concerns, The Ecology and Behavior of Amphibians concludes with a chapter devoted to amphibian conservation. An unprecedented scholarly contribution to amphibian biology, this book is eagerly anticipated among specialists.

diagram of pulmonary and systemic circulation: Pathophysiology Kathryn L. McCance, RN, PhD, Sue E. Huether, RN, PhD, 2014-01-14 With easy-to-read, in-depth descriptions of disease,

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