

# Fluid & Electrolyte Basics III

## Fundamentals of Nursing

**TEST TIP** The **MOST deadly** conditions are typically the **MOST tested** conditions, since the main goal of nursing school is to create safe nurses.

Electrolytes	Function	HYPER "HIGH"	Hypo "low"
<b>Potassium K+</b> <b>3.5 - 5.0</b> 		<b>HYPERkalemia</b> (over 5.0) <b>Manifestations (M/S)</b> Heart = HIGH danger 1. ECG changes (tall peaked T waves) 2. Prolonged QT interval 3. Bradycardia 4. Asystole 5. Hypotension 6. Flaccid paralysis 7. Respiratory depression 8. Anuria 9. Anorexia 10. Nausea/vomiting <b>Causes</b> - Renal Failure - Liver Disease - Excessive K+ intake - Acidosis	<b>HYPOkalemia</b> (below 3.0) <b>Manifestations (M/S)</b> Heart = HIGH danger 1. ECG changes (flattened T waves) 2. Prolonged QT interval 3. Arrhythmias 4. Hypotension 5. Bradycardia 6. Asystole 7. Hypotension 8. Flaccid paralysis 9. Respiratory depression 10. Anuria 11. Anorexia 12. Nausea/vomiting <b>Causes</b> - Renal Failure - Liver Disease - Excessive K+ loss - Acidosis
<b>Sodium Na+</b> <b>135 - 145</b> 	Maintains: • Blood Pressure • Blood volume • pH balance 	<b>HYPERnatremia</b> (over 145) <b>Manifestations (M/S)</b> Body = Big & Dehydrated 1. Extreme thirst/dry mouth 2. Irritated "frazzled" skin 3. Rapid dry tongue 4. Muscle cramps 5. Headache & vomiting <b>Causes</b> - High NaCl (sodium) intake - Low NaCl (sodium) loss - Excessive sweating - Excessive diuresis - Loss of water	<b>HYPONatremia</b> (below 135) <b>Manifestations (M/S)</b> Body = Small & swollen 1. Headache 2. Nausea & vomiting 3. Muscle cramps 4. Irritability 5. Lethargy 6. Seizures 7. Coma <b>Causes</b> - Excessive water intake - Excessive sweating - Excessive diuresis - Loss of water
<b>Chloride Cl-</b> <b>97 - 107</b> 	Related to sodium Maintains: • Blood pressure • Blood volume • pH balance 	<b>HYPERchloremia</b> (over 107) <b>NEARLY SAME AS HIGH SODIUM</b> 1 - Swollen dry tongue 2 - Nausea & vomiting Metabolic Alkalosis - vomiting 	<b>HYPOchloremia</b> (below 97) <b>NEARLY SAME AS low SODIUM</b> 1 - Fatigue & muscle cramps 2 - Fever (only difference) 
<b>Magnesium Mg+</b> <b>1.3 - 2.1</b> 		<b>HYPERmagnesemia</b> (over 2.1) <b>Manifestations (M/S)</b> Heart = High Malfunction 1. Heart block 2. Hypotension, bradycardia 3. ECG changes 4. Asystole 5. Hypotension 6. Flaccid paralysis 7. Respiratory depression 8. Anuria 9. Anorexia 10. Nausea/vomiting <b>Causes</b> - Renal Failure - Alcoholism - Medication overdose	<b>HYPOmagnesemia</b> (below 1.3) <b>Manifestations (M/S)</b> Heart = Low Malfunction 1. Heart block 2. Hypotension, bradycardia 3. ECG changes 4. Asystole 5. Hypotension 6. Flaccid paralysis 7. Respiratory depression 8. Anuria 9. Anorexia 10. Nausea/vomiting <b>Causes</b> - Renal Failure - Alcoholism - Medication overdose
<b>Calcium Ca</b> <b>9.0 - 10.5</b> 	Keeps the 3 Bs Strong ■ - Bone ■ - Blood (clotting) ■ - Beats (heart) Inverse relationship with Phosphate 	<b>HYPERcalcemia</b> (over 10.5) <b>Manifestations (M/S)</b> HIGH Calcium 1 - Kidney stones, muscle & joint pain (bone pain) 2 - Constipation 3 - Bone pain 4 - Severe muscle weakness & fatigue <b>Causes</b> - Hyperparathyroidism - High PTH = High Calcium - Cancer - Immobility	<b>HYPOcalcemia</b> (below 9.0) <b>Manifestations (M/S)</b> LOW Calcium 1 - Muscle cramps 2 - Tetany 3 - Paresthesia 4 - Irritability 5 - Lethargy 6 - Seizures 7 - Coma <b>Causes</b> - Hypoparathyroidism - Low PTH = Low Calcium - Immobilization - Vitamin D deficiency
<b>Phosphate</b> <b>3.0 - 4.5</b> 	- Ca HIGH = Phosphate Low - Ca Low = Phosphate HIGH Inverse relationship with Calcium 	<b>HYPERphosphatemia</b> (over 4.5) <b>Manifestations (M/S)</b> High Low Calcium signs 1 - Muscle cramps 2 - Tetany 3 - Paresthesia 4 - Irritability 5 - Lethargy 6 - Seizures 7 - Coma <b>Causes</b> - Renal Failure - Excessive phosphate intake - Excessive phosphate release from bone	<b>HYPOphosphatemia</b> (below 3.0) <b>Manifestations (M/S)</b> High High Calcium signs 1 - Kidney stones, muscle & joint pain 2 - Constipation 3 - Bone pain 4 - Severe muscle weakness & fatigue <b>Causes</b> - Hyperparathyroidism - High PTH = High Calcium - Cancer - Immobility

# Fluid And Electrolytes

**Alluru S. Reddi**



## **Fluid And Electrolytes:**

*Fluids and Electrolytes in the Surgical Patient* Carlos Pestana, 2000 Now in its thoroughly revised updated Fifth Edition this handbook is the only volume on fluids and electrolytes that is geared specifically to surgical residents and surgeons It explains in practical terms how to assess and manage problems of fluid electrolyte and acid base balance in surgical patients This edition s chapters have all been rewritten for easier readability New charts and figures have been added and tables have been revised to reflect recent modifications in therapy The text precisely describes the specific characteristics and uses of all currently available fluids This edition also provides more information on the interpretation and therapeutic implications of laboratory results

**Fluid and Electrolytes in Pediatrics** Leonard G. Feld, Frederick J. Kaskel, 2009-12-15 One of the time honored foundations of the practice of pediatric medicine is the understanding and application of the principles of fluid electrolyte and acid base disorders Presented in a new softcover format *Fluid and Electrolytes in Pediatrics A Comprehensive Handbook* brings together a select group of authors who share a passion and an appreciation of the contributions of pioneers in pediatric medicine and an expertise for their respective areas in a new softcover edition The volume provides in depth discussions of the basic functioning of the kidneys skin and the lungs Each chapter describes the etiology and demographics biological mechanisms patient presentation characteristics therapy options and consequences of optimal treatment as well as delayed treatment *Fluid and Electrolytes in Pediatrics A Comprehensive Handbook* provides health professionals in many areas of research and practice with the most up to date accessible and well referenced volume on the importance of the maintenance of fluid and electrolyte concentrations in the pediatric population especially under acute care

**Fluids and Electrolytes Made Incredibly Easy** Lippincott Williams & Wilkins, 2005 Now in its third edition this informative and indispensable reference reviews fundamental information about fluids electrolytes and acid based balance identifies electrolyte fluid acid and base imbalances describes imbalances in major health problems and more in an easy to understand format

**Fluids and Electrolytes Demystified, Second Edition** Joyce Y. Johnson, 2018-05-22 The fast fun and easy way for nurses to get up to speed on fluids and electrolytes *Fluids and Electrolytes Demystified Second Edition* is a detailed easy to understand overview of the essential concepts involved in fluid electrolyte and acid base balance and imbalance This reader friendly book emphasizes the most critical information by discussing the underlying mechanisms involved in maintaining fluid electrolyte and acid base balance by discussing the factors that fail and result in an imbalance To promote understanding there is coverage of the developmental changes and major conditions that result in fluid electrolyte or acid base imbalances The nursing assessments interventions and evaluations are reviewed to provide a complete picture of the patient s needs and nursing care situation Useful charts Key Terms Learning Objectives Speed Bumps and brief Overviews are included to help you remember must know concepts and end of chapter NCLEX style quizzes test your knowledge for the most effective learning experience possible Everything you need to gain a working knowledge of Key Elements Underlying

Fluid and Electrolyte Balance Key Elements Underlying Acid Base Balance General Nursing Assessments in Diagnostic Tests Related to Fluid Electrolyte and Acid Base Balance Fluid Volume Imbalance Sodium Imbalances Potassium Imbalances Calcium Imbalance Magnesium Imbalances Phosphorus Imbalances Acid Base Imbalances Simple enough for a beginner but challenging enough for advanced students Fluids and Electrolytes Demystified is your best choice for gaining a solid grasp of one of the most challenging topics nurses need to master [Brunner & Suddarth's Textbook of Medical-surgical Nursing](#) Suzanne C. O'Connell Smeltzer, Brenda G. Bare, Janice L. Hinkle, Kerry H. Cheever, 2010 Preparing students for successful NCLEX results and strong futures as nurses in today's world Now in its 12th edition Brunner and Suddarth's Textbook of Medical Surgical Nursing is designed to assist nurses in preparing for their roles and responsibilities in the medical surgical setting and for success on the NCLEX In the latest edition the resource suite is complete with a robust set of premium and included ancillaries such as simulation support adaptive testing and a variety of digital resources helping prepare today's students for success This leading textbook focuses on physiological pathophysiological and psychosocial concepts as they relate to nursing care Brunner is known for its strong Nursing Process focus and its readability This edition retains these strengths and incorporates enhanced visual appeal and better portability for students Online Tutoring powered by Smarthinking Free online tutoring powered by Smarthinking gives students access to expert nursing and allied health science educators whose mission like yours is to achieve success Students can access live tutoring support critiques of written work and other valuable tools **Fluid & Electrolytes** Martin G. Cogan, 1991 [Fluid and Electrolytes for Nursing Students](#) Valencia Payne, 2014-09-02 Fluid and Electrolytes for Nursing Students focuses on all the electrolyte imbalances along with the disease processes that are associated with each electrolyte imbalance This book also acts as a visual aid to stimulate the students to retain the information **Fluids and Electrolytes: An Incredibly Easy! Pocket Guide** Lippincott, 2012-03-28 Fluids and Electrolytes An Incredibly Easy Pocket Guide Second Edition provides just the essential facts in a streamlined bulleted quick reference format using illustrations logos and other Incredibly Easy features to help nurses spot key points at a glance The opening chapters review the basics of fluid electrolyte and acid base balance Subsequent chapters address specific imbalances providing vital information for safe and effective care The last chapter covers such treatments as IV fluid replacement and total parenteral nutrition This edition has been revised and updated and includes new entries on acute pancreatitis and heat syndrome **Fluids and Electrolytes** Lippincott Williams & Wilkins, 2007 This quick reference pocket guide offers LPNs LVNs clear explanations of difficult concepts related to fluid electrolyte and acid base balance The book describes specific imbalances their pathophysiological mechanisms and various therapies including I V fluid replacement total parenteral nutrition and blood component therapy Information is presented in a highly organized format with abundant illustrations Recurring icons include Red Flag key findings risks complications and contraindications associated with an imbalance or therapy Life Stages age related variations and Spotlight flow charts or

illustrations depicting physiologic and pathophysiologic mechanisms      Quick Look Nursing Mary Baumberger-Henry,2008-07-02 The Quick Look Nursing Series helps students gain basic understanding of core concepts in an easy to read format The concise presentation of information provides essential content and offers a practical alternative to lengthier texts without sacrificing critical information The Second Edition of this text offers updated information on the terminology involving fluids and electrolytes as well as the need for acid base balance in the body and study questions essential for the NCLEX      Monitoring Fluid and Electrolytes Precisely ,1983      **Fluids & Electrolytes** ,2006 Fluids and Electrolytes A 2 in 1 Reference for Nurses offers both a serious reference book to read and a collection of logically organized bullet points for a quick review The wide inner column of each page contains narrative text so nurses can for instance carefully read about the pathophysiology underlying an imbalance or the signs associated with the imbalance The narrow outer column lists the corresponding summaries better to rapidly review the key pathophysiologic events or key signs and symptoms Full color inserts enhance the content by bringing to life trademark ECG findings associated with two critical electrolytes potassium and calcium and their impact on myocardial function      Fluid, Electrolyte, and Acid-base Regulation Jack L. Keyes,Keyes,1990 This is an intermediate to advanced text on the physiology and pathophysiology of fluid electrolyte and acid base regulation It is intended for students and health care professionals who are engaged in caring for patients with disturbances of fluid electrolyte and acid base balance in any of the myriad of clinical settings      **Core Concepts in the Disorders of Fluid, Electrolytes and Acid-Base Balance** David Mount,Mohamed H. Sayegh,Ajay K. Singh,2012-08-04 Fluid electrolyte and acid base disorders are central to the day to day practice of almost all areas of patient centered medicine both medical and surgical Virtually every aspect of these disorders has experienced major developments in recent years Core Concepts in the Disorders of Fluid Electrolytes and Acid Base Balance encompasses these new findings in comprehensive reviews of both pathophysiology and clinical management In addition this volume offers clinical examples providing step by step analysis of the pathophysiology differential diagnosis and management of selected clinical problems Written by leading experts in fluid electrolyte and acid base disorders this reference is an invaluable resource for both the nephrologist and the non specialist physician or medical trainee      *Fluid And Electrolyte Balance A Reference For Nurses* Gale Gaibler,2020-11-28 Fluid and electrolyte balance is a dynamic process that is crucial for life and homeostasis It s probably one of the most common challenges for nursing students Luckily I have crafted this incredible study tool for you In this book You will be given all the secrets YOU NEED TO KNOW in order to look at a patients laboratory values and understanding them without difficulty Patients with electrolyte imbalances tend to have serious problems that you alone can figure out and interpret by using this book Every patient you treat has the potential for a fluid and electrolyte imbalance and it is the job of every nurse to recognize when this is happening and be informed of all the ways this can affect the patient In 24 Hours or Less You Will Understand The Basics of Fluid Balance The Meaning of Hypo and Hypernatremia The Balance of

Potassium in the Body The Dangers of Electrolyte Imbalances What it Means When Some of the Trace Electrolytes are out of Balance All of this will become clear to you soon and you can become a fluid and electrolyte expert understanding things that it takes months for others to understand What is holding you back In no time you will be CRUSHING the NCLEX Exam

**Fluids and Electrolytes** Catherine Paradiso,1999 This book is designed to prepare students for classes or NCLEX by providing a comprehensive outline review of this particularly difficult area of study Fluids and Electrolytes offers extensive self testing that includes answer keys with rationale for correct and incorrect responses as well as a comprehensive outline review and chapter study questions and a comprehensive examination at the end of the book Each question is categorized according to the components of the National Council of State Boards of Nursing Licensing Examinations NCLEX Includes FREE disk containing more NCLEX questions

**Fluids & Electrolytes** Cynthia C. Chernecky,Denise Macklin,Kathleen Murphy-Ende,2006 This readable and student friendly guide simplifies and clearly explains the complex concepts and processes of fluids and electrolytes in the human body It utilizes a step by step learning approach and starts with the basics and advances to cover more complex issues This new edition features revised NCLEX examination style questions and new case studies

**Fluid, Electrolyte, and Acid-Base Imbalances** Allison Hale,Mary Jo Hovey,2013-10-29 Here s all of the crucial coverage you need to succeed in class and confidently prepare for your classroom exams and the NCLEX Easy to follow outlines focus on the information essential to make this challenging subject more manageable

*Fluids, Electrolytes and Acid-Base Balance* Jon Haws,Sandra Haws,2015-04-20 Table of contents Fluid and electrolyte basics Kidney s role in fluid and electrolyte balance Disorders of fluid balance Nursing assessment Electrolyte disorders Acid base balance Acid base disorders Case study 1 Case study 2 Lab values in assessment of fluid electrolyte and acid base balance NCLEX fluid and electrolyte questions

**Fluid, Electrolyte and Acid-Base Disorders** Alluru S. Reddi,2013-10-23 Fluid Electrolyte and Acid Base Disorders Clinical Evaluation Management is a clear and concise presentation of the fundamentals of fluid electrolyte and acid base disorders frequently encountered in clinical practice Each chapter begins with pertinent basic physiology followed by its clinical disorder Cases for each fluid electrolyte and acid base disorder are discussed with answers In addition board type questions with explanations are provided for each clinical disorder to increase the knowledge for the clinician Practical and clinically oriented this book is a handy reference for practicing physicians students residents and fellows

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