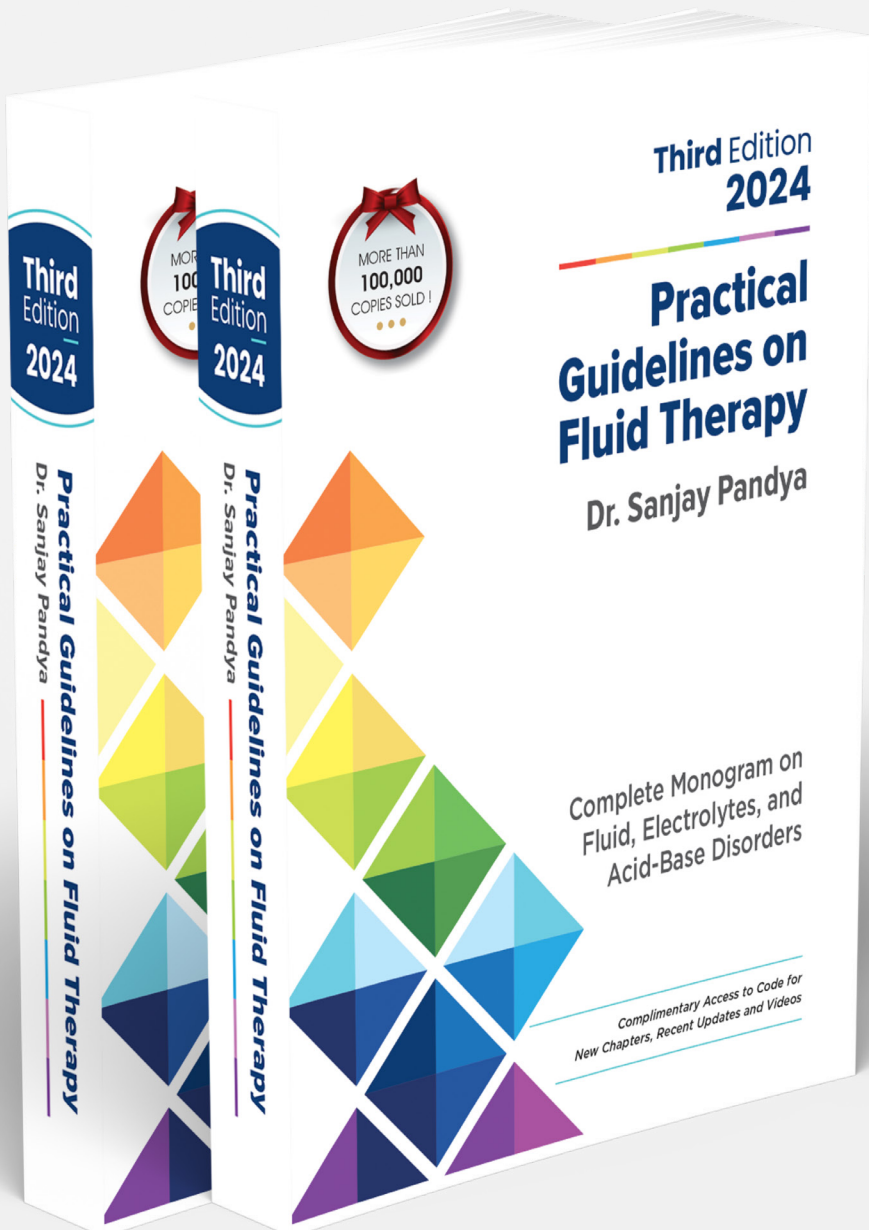




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Chapter 22: Hypokalemia



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POTASSIUM

PHYSIOLOGICAL BASIS

Potassium (K⁺) is a major intracellular cation and the second most abundant cation in the body (next to cation sodium). Total body potassium is about 3,500 mEq. Out of this, 98% of potassium is intracellular, and just 2% of potassium is extracellular. Thus, the normal serum potassium concentration is 3.5 to 5.0 mEq/L vs. an intracellular 140 to 150 mEq/L.

Potassium plays a crucial role in the following:

- Normal functioning of cells: Synthesis of DNA and protein, cell division and growth, and enzyme function.
- Neuromuscular transmission: Maintaining cell membrane potential, cellular excitability, conduction of nerve impulses which help in maintaining skeletal, cardiac, and smooth muscle cell contraction.

- Regulate intracellular osmolality and cell volume.
- Maintain acid-base balance and regulate intracellular pH.

POTASSIUM HOMEOSTASIS

The average potassium intake is about

77 and 59 mEq per day in adult men and women, respectively [1]. 90% of potassium consumed is absorbed in the upper gastrointestinal (GI) tract, out of which kidneys excrete 90%, and the remaining 10% is excreted in the stool.

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