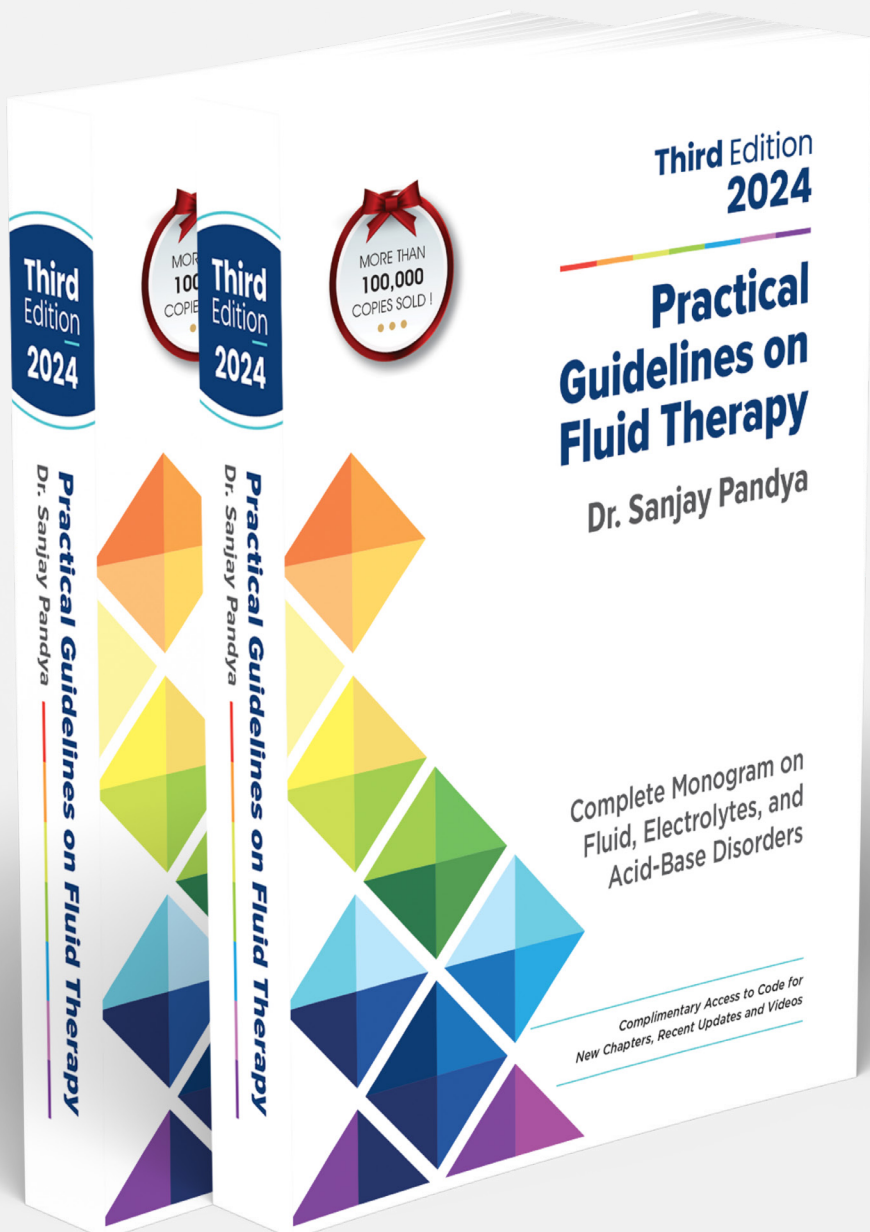




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Chapter 3:

Dextrose and Sodium Chloride Solutions



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3

Dextrose and Sodium Chloride Solutions

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Crystalloids are solutions in sterile water which contain varying concentrations of electrolytes and dextrose. Dextrose and sodium chloride containing crystalloid solutions are discussed (Summarized in Table 3.1).

5% DEXTROSE (D5W)

Composition

One liter of fluid contains:

Dextrose	50 gm
Osmolality	252 mOsm/L
Caloric value	170 kcal/L
pH	4.3 (3.2 to 6.5)

Each 100 ml contains: Hydrous Dextrose USP 5 gm

Pharmacological basis

5% dextrose (usually abbreviated as D5W) provides free water with glucose without electrolytes. D5W is selected when there is a need for water but not electrolytes.

When a patient requires pure water, we administer intravenous 5% dextrose. Intravenous administration of free water is avoided due to its potential to cause hemolysis of red blood cells. However, the addition of dextrose renders the fluid near isotonic (252 mOsm/L) and does not result in hemolysis within the body.

5% dextrose packed in the bag is an isotonic solution, but once infused becomes a hypotonic solution in the body

as dextrose is consumed rapidly, and the remaining plain water is hypotonic [1].

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