

# Fluid and Electrolyte Cheat Sheet

**Adult quick reference** for normal electrolyte ranges, IV fluid tonicity, imbalance signs, nursing interventions and refeeding syndrome monitoring.

Reference ranges vary by laboratory and analyzer. Always confirm against your facility's lab report and critical-value thresholds.

## ELECTROLYTE NORMAL VALUES

| Electrolyte     | Symbol | Typical adult serum range | Primary function                                          |
|-----------------|--------|---------------------------|-----------------------------------------------------------|
| Sodium          | Na+    | 135-145 mEq/L             | Regulates extracellular fluid volume                      |
| Potassium       | K+     | 3.5-5.0 mEq/L             | Supports nerve and muscle activity and cardiac conduction |
| Calcium (total) | Ca2+   | 8.5-10.5 mg/dL            | Bone health and muscle contraction                        |
| Magnesium       | Mg2+   | 1.3-2.1 mEq/L             | Enzyme cofactor and cardiac conduction                    |
| Phosphate       | PO4    | 2.5-4.5 mg/dL             | ATP production and bone mineral                           |

Ionized calcium reads differently from total calcium, so note which one your lab reports.

## IV FLUID TONICITY

| Tonicity   | Common examples                         | Effect on cells          | Nursing consideration                    |
|------------|-----------------------------------------|--------------------------|------------------------------------------|
| Isotonic   | 0.9% sodium chloride, lactated Ringer's | Cell volume stays stable | Common choice for volume replacement     |
| Hypotonic  | 0.45% sodium chloride                   | Water moves into cells   | Monitor for cerebral edema risk          |
| Hypertonic | 3% sodium chloride, 10% dextrose        | Water moves out of cells | Prescriber order and monitoring required |

Fluid selection is a prescriber decision. Check what the fluid does, then confirm the order and rate against your protocol.

## SODIUM AND POTASSIUM IMBALANCES

| Imbalance            | Common causes                                           | Signs to watch for                                         | Nursing interventions                                                                                           |
|----------------------|---------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Hyponatremia</b>  | Excess free water intake, SIADH (dilutional low sodium) | Confusion, headache, seizures                              | Assess neurological status, review intake and output and fluid restriction, follow the prescriber's sodium plan |
| <b>Hypernatremia</b> | Free water losses                                       | Thirst, dry mucous membranes                               | Assess thirst and mucous membranes, review free water losses, monitor for rapid correction                      |
| <b>Hypokalemia</b>   | Diuretic use, GI losses                                 | Muscle weakness, cramping, arrhythmia risk                 | Review diuretics, GI losses and magnesium status before planning replacement                                    |
| <b>Hyperkalemia</b>  | Reduced renal function, medications                     | Dangerous cardiac changes; above 6.5 mEq/L is an emergency | Escalate immediately, check the ECG, review renal function and medications, follow institutional protocol       |

## CALCIUM, MAGNESIUM AND PHOSPHATE IMBALANCES

| Electrolyte | Low level signs                          | High level signs                                                   | Nursing focus                            |
|-------------|------------------------------------------|--------------------------------------------------------------------|------------------------------------------|
| Calcium     | Tingling, tetany, positive Chvostek sign | Constipation, confusion, polyuria                                  | Check ionized vs total level and albumin |
| Magnesium   | Tremor, arrhythmia, hyperreflexia        | Lethargy, reduced reflexes, hypotension                            | Review renal function before replacement |
| Phosphate   | Weakness, respiratory muscle fatigue     | Muscle cramps, tetany, paresthesias (from associated hypocalcemia) | Trend levels during refeeding            |

## REFEEDING SYNDROME MONITORING PRIORITIES

Refeeding syndrome is a serious shift in phosphate, potassium and magnesium after nutrition restarts in a malnourished patient. The drop in phosphate is the hallmark, and it can cause cardiac and respiratory complications.

1. Identify patients at risk before feeding starts, using your facility's screening tool.
2. Check phosphate, potassium and magnesium at baseline and during early feeding.
3. Follow the prescriber's replacement and feeding-rate plan.
4. Escalate any sudden change in levels or new cardiac or respiratory symptoms.

## BEDSIDE CHECK

- ☐ Compare the latest electrolyte results with the normal values table.
- ☐ Match symptoms to the imbalance tables and note the likely cause.
- ☐ Check the IV fluid tonicity against the current order before the bag is hung.
- ☐ Escalate per protocol when a value reaches an institutional critical threshold.
- ☐ Record findings and follow-up actions in the patient record at handoff.

## BEDSIDE NOTES

Patient name \_\_\_\_\_ Date and time \_\_\_\_\_

Na+ \_\_\_\_\_ K+ \_\_\_\_\_

Ca2+ \_\_\_\_\_ Mg2+ \_\_\_\_\_

PO4 \_\_\_\_\_ Current IV fluid and rate \_\_\_\_\_

Actions taken and escalation

Nurse name and signature \_\_\_\_\_ Handoff to \_\_\_\_\_

*This cheat sheet is a reference tool. It does not replace your facility's protocols or prescriber orders.*