

EDITORIAL

Refeeding Syndrome: The Silent Threat in Nutritional Rehabilitation

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Refeeding syndrome (RFS) is one of the most underestimated metabolic emergencies in clinical practice. Even though it has been documented for decades, its subtle onset and complex nature continue to challenge healthcare providers in intensive care units, nutrition wards, and community health settings. As the healthcare system increasingly values early nutritional support, awareness and vigilance about refeeding syndrome are more important than ever.

Understanding the Pathophysiology

Refeeding syndrome involves a significant metabolic change. In a state of starvation or chronic malnutrition, the body adapts to a lack of energy by reducing insulin secretion and turning to fat and protein breakdown for energy. When carbohydrates are reintroduced, insulin levels spike, pulling glucose and electrolytes, especially phosphate, potassium, and magnesium, into the cells.¹

This quick shift can lead to severe hypophosphatemia, which is the main biochemical feature of RFS. Phosphate is critical for ATP, 2,3-DPG, and cellular metabolism. Its sudden depletion can cause respiratory failure, arrhythmias, rhabdomyolysis, and neurological issues. Additionally,

low potassium, low magnesium, thiamine deficiency, and sodium-water retention can worsen the condition, often resulting in fatal outcomes if not caught early.²

Who Is at Risk?

Clinicians should be alert to the following groups at high risk:

- Patients with prolonged fasting, anorexia nervosa, or chronic alcoholism
- Individuals with cancer cachexia, long ICU stays, or severe infections
- Patients recovering from bariatric or gastrointestinal surgery
- Elderly or socially isolated individuals with poor nutrition

The National Institute for Health and Care Excellence (NICE) guidelines offer a structured risk assessment based on body mass index, weight loss percentage, and the duration of nutritional deprivation.³

Clinical Manifestations

Symptoms may begin within 24 to 72 hours after feeding starts and can vary from mild fatigue to severe multi-organ failure.⁴

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- **Cardiac:** Arrhythmias, heart failure, low blood pressure
- **Respiratory:** Ventilatory failure due to muscle weakness in the diaphragm
- **Neurological:** Seizures, confusion, tingling sensations
- **Musculoskeletal:** Weakness, muscle pain, rhabdomyolysis
- **Metabolic:** Swelling, metabolic alkalosis, fluid overload

Diagnostic Approach

There is no single lab test that confirms refeeding syndrome; it is diagnosed based on clinical signs supported by lab results. Key indicators include:

- A rapid drop in serum phosphate (<0.65 mmol/L) within 72 hours of feeding
- Concurrent decreases in magnesium and potassium
- Signs of thiamine deficiency (Wernicke's encephalopathy, lactic acidosis)

Close biochemical monitoring, especially during the first five days of refeeding, is essential.^{1,3}

Prevention and Management Strategies

- **Risk Identification:** Screen all malnourished or at-risk patients before starting feeds.
- **Start Low, Go Slow:** Begin feeding at ≤ 10 kcal/kg/day and increase gradually over 4 to 7 days.
- **Thiamine Supplementation:** Give 100 to 300 mg/day of thiamine before and during the initial refeeding period.
- **Electrolyte Correction:** Correct low phosphate, potassium, and magnesium levels before giving calories.

- **Monitor Closely:** Daily checks of electrolytes, fluid balance, and heart rhythm during the first week.
- **Multidisciplinary Approach:** Teamwork among physicians, dietitians, and critical care nurses ensures early detection and timely intervention.

The real issue with refeeding syndrome is not its rarity but its preventability. In modern medicine, where nutritional rehabilitation is crucial for recovery, failing to recognize metabolic adaptation can turn a life-saving treatment into a deadly one. This syndrome highlights the fragile relationship between biochemistry and clinical nutrition, reminding us that "feeding" is both a therapeutic act and a biological necessity.

It is time for hospitals and health institutions to standardize refeeding protocols, build risk assessment tools into electronic health records, and promote ongoing education for healthcare providers. Preventing each case demonstrates the power of awareness over complacency, showcasing the clinician's commitment to the complex metabolic needs of patients.

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