

Nutritional Support for Proton Pump Inhibitor Therapy

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How Proton Pump Inhibitors Impact Nutrient Status

Proton pump inhibitors (PPIs) are among the most widely prescribed medications for the treatment of gastroesophageal reflux disease (GERD), peptic ulcer disease (PUD), and other conditions associated with gastric acid hypersecretion. PPIs irreversibly inhibit hydrogen-potassium pumps within gastric parietal cells, causing a sustained and significant reduction in gastric acid. This can help control heartburn and promote tissue repair in the stomach and duodenum by limiting acid exposure.

Compromised nutritional status often accompanies PPI use. Gastric acidity plays a critical role in nutrient assimilation by facilitating the release of vitamins and minerals from food matrices and promoting their bioavailability. Prolonged acid suppression may decrease the solubilization and ionization of pH-dependent nutrients. Absorption of key minerals such as calcium, magnesium, iron, and zinc is impaired, potentially contributing to deficiencies that impact immune status, bone health, neuromuscular function, and hematopoiesis. Vitamin B₁₂ absorption is particularly vulnerable, as gastric acid is necessary to liberate B₁₂ from dietary proteins and support its binding to intrinsic factor.

Gastric acid also serves as a critical defense mechanism, helping to kill ingested pathogens before they colonize deeper in the gastrointestinal tract. When acid levels are suppressed, susceptibility to infections increases, which may further disrupt nutrient absorption and overall nutritional status. Certain populations are especially vulnerable to nutrient malabsorption, such as older adults, individuals with poor diet quality, those with higher nutrient requirements, and patients taking multiple medications, where polypharmacy can compound the risk of deficiency.

Supporting patients with nutrient repletion strategies, coupled with lifestyle and dietary modifications, can help preserve nutritional status, optimize nutrient assimilation, and support long-term health.

Supportive Lifestyle Practices

- Activate the parasympathetic nervous system through diaphragmatic breathing, guided meditation, and mindfulness. This can enhance gastric motility, mucosal blood flow, and the mucus-bicarbonate barrier, all protective measures against gastric acid injury.¹
- Tailor exercise recommendations to patient tolerance and clinical goals. Low-impact activities like stationary cycling and walking may be better options than high-impact activities that can exacerbate symptoms such as belching, abdominal fullness, regurgitation, and heartburn.²
- Encourage patients to stay upright after eating and avoid late-night meals. Consuming food within three hours of lying supine increases reflux symptoms, while eating earlier in the evening significantly reduces them.³

Whole Foods Nutritional Recommendations

- Encourage the intake of foods rich in vitamin B₁₂, like salmon, shellfish, turkey, eggs, and dairy. Prolonged PPI use can impair B₁₂ uptake, which requires an acidic gastric environment (pH ~1–2) to release B₁₂ from food proteins.⁴
- Consume magnesium-rich foods like Swiss chard, collard greens, spinach, beans, and pumpkin seeds. PPIs suppress gastric acid secretion, which can reduce the solubility of magnesium salts and impair passive and active intestinal absorption.⁵
- Encourage patients on PPIs to consume plenty of iron-containing foods such as meat, poultry, seafood, legumes, and dark leafy vegetables. Gastric acid secretion may become impaired with long-term PPI therapy, leading to iron malabsorption and a potential deficiency.⁶ Gastric acid is required to convert ferric iron (Fe³⁺) into the more absorbable ferrous (Fe²⁺) form.
- Promote the inclusion of zinc-rich foods such as oysters, beef, poultry, and pumpkin seeds. Zinc absorption requires proper gastric acidity, and PPI users may experience zinc depletion over time.⁷

Dietary Supplement Regimen



Cataplex® B₁₂

Suggested Use: **1 tablet per day**

Cataplex B₁₂ supports blood health and general well-being.*

- Supports production of healthy red blood cells*
- Supports folic acid metabolism and homocysteine management*
- Essential for normal myelin synthesis and central nervous system function*
- Excellent source of vitamin B12



Magnesium Lactate

Suggested Use: **2 tablets per day**

Magnesium is critical for the central nervous system, skeletal muscle, and cardiovascular systems, and is involved in:

- The body's energy production and electrolyte balance*
- Bone formation and proper calcium utilization*
- Body relaxation and muscle health*
- Supporting normal inflammatory processes for healthy aging*



Ferrofood®

Suggested Use: **1 capsule per day with food**

Ferrofood® contains iron to support the body's need for this mineral.*

- Supports healthy blood*
- Promotes and supports normal blood production*
- Provides iron and vitamin B12, which is essential for the synthesis of hemoglobin and helps deliver oxygen to red blood cells*
- Supports enzyme actions in the body*
- Contains vitamin C to help with iron absorption*
- Excellent source of iron, vitamin B12, and antioxidant vitamin C



Zinc Chelate™

Suggested Use: **1 tablet per day**

Zinc Chelate™ is an easily absorbed zinc supplement in tablet form that supports a healthy immune system and promotes the healthy creation of new cells.*

- Promotes protein synthesis*
- Supports a healthy immune system*
- Supports skin health*
- Supports male hormonal health*
- Excellent source of zinc

Assessment of Nutritional Status on PPIs

In Office/Physical Exam

- **Lab Studies:** Complete blood count with differential, comprehensive metabolic panel, iron panel with ferritin, thyroid panel, methylmalonic acid, homocysteine, serum B12, 25-OH vitamin D, zinc, RBC magnesium
- DEXA bone density scan

- **Medical history:** Older age, vegetarian or vegan diet, polypharmacy
- **Signs/symptoms:** Fatigue, shortness of breath, peripheral neuropathy, muscle cramps or spasms, frequent infections, brittle nails, hair loss, heart palpitations, and cognitive changes

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