Standard Process
WHOLE FOOD NUTRIENT SOLUTIONS

Nutritional Support Protocol

Nutritional Support for GLP-1 Receptor Agonist Therapy

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

How GLP-1 Receptor Agonists Impact Nutrient Status

Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are a class of medications used in clinical practice primarily for the management of type 2 diabetes mellitus and obesity. They act by stimulating GLP-1 receptors in the brain and gastrointestinal tract. This activation enhances insulin secretion, suppresses appetite, slows gastric emptying, and delays intestinal transit. Collectively, these effects promote satiety and a prolonged sense of fullness.

The mechanisms that support the clinical efficacy of GLP-1 RAs may inadvertently compromise nutritional status. Delayed gastric emptying disrupts the normal digestive process and can impair the absorption of essential nutrients due to the disrupted motility of the stomach. Altered gastric acidity disrupts nutrient assimilation by hindering the release, activation, and absorption of pH-dependent nutrients such as calcium, magnesium, iron, and vitamin B_{12}. Reduced gastrointestinal motility may also change the gut microbiota and cause bacterial overgrowth, which can negatively impact nutrient synthesis and absorption.

In addition, GLP-1 signaling inhibits gallbladder contraction and modulates chylomicron assembly, thereby impairing the emulsification and digestion of dietary lipids. This disruption can contribute to deficiencies in fat-soluble vitamins (A, D, E, and K), omega-3 fatty acids, and other lipophilic nutrients such as coenzyme Q10 in patients taking GLP-1 RAs. Finally, appetite suppression, while beneficial for weight loss, may reduce overall nutrient intake. Inadequate protein consumption, in particular, poses risks to muscle mass and bone integrity, especially in populations vulnerable to sarcopenia and osteoporosis.

Nutritional and lifestyle interventions can be used alongside GLP-1 receptor agonists to proactively support nutrient status and safeguard long-term health.

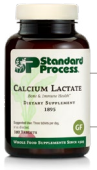
Supportive Lifestyle Practices

- Encourage regular consumption of water, herbal tea, and other beverages throughout the day without waiting for thirst cues to prompt drinking. GLP-1 agonists directly suppress the neural mechanism that regulates thirst, reducing the natural cues to drink.[1]
- Physical activity promotes gastric emptying and intestinal peristalsis. Evidence suggests regular moderate aerobic exercise, such as 30 minutes of walking five days a week, significantly improves gut motility and GI transit time.[2]
- Encourage slow, mindful eating, deep breathing, and stress management to activate the parasympathetic nervous system (PNS). The PNS governs the “rest and digest” state critical to nutrient breakdown and absorption.[3] In the gastrointestinal tract, parasympathetic activation increases motility, relaxes sphincters, and stimulates the release of gastric secretions.

Whole Foods Nutritional Recommendations

- Encourage regular consumption of whole foods rich in calcium such as green leafy vegetables, yogurt, cheese, milk, sardines, and anchovies. Individuals using GLP-1 receptor agonists not only tend to under-consume calcium, but may also experience disrupted calcium absorption due to altered gastric acidity.[4,5]
- Recommend whole food sources of vitamin B_{12}, such as liver, clams, beef, eggs, and dairy products. GLP-1 RAs are known to slow gastric emptying and alter gastric acidity, which can impair the release of B_{12} from the food matrix and decrease its absorption in the small intestine.[6]
- Encourage consumption of protein-rich foods at the beginning of meals to help ensure adequate intake among patients on GLP-1 RAs. Whole food sources such as dairy products, beef, seafood, poultry, eggs, and legumes are recommended. To support the preservation of muscle mass, aim for a daily protein intake of 1.2 to 2.0 grams per kilogram of body weight.[7]
- Ensure adequate intake of foods rich in vitamin D, such as fatty fish and eggs. Vitamin D is the most common nutritional deficiency reported with the initiation of GLP-1 RA therapy.[8] Decreased fat absorption secondary to delayed gastric emptying and altered bile acid metabolism can impair the absorption of fat-soluble vitamins.

Dietary Supplement Regimen



Calcium Lactate

Suggested Use: **3 tablets per day**

- Supports muscle and nerve function*
- Supports and helps maintain healthy bone density and remodeling*
- Provides support in the immune system response function*
- Excellent source of calcium
- Good source of magnesium

Trace Minerals B_{12}™

Suggested Use: **1 tablet per day**

- Provides essential cofactors for healthy cell functioning*
- Among other functions, these trace minerals support ligament, cartilage, and bone structure; immune system response function and thyroid function; fat metabolism; and calcium utilization*
- Excellent source of vitamin B_{12}, iodine, zinc, copper and manganese

Whey Pro Complete

Suggested Use: **2 heaping tablespoons (scoops), 1-3 times per day**

- Helps promote satiety*
- Supports muscle growth and repair processes*
- Can be mixed in a supplement shake or added to foods
- Excellent source of protein that contains all essential amino acids

Cataplex® D

Suggested Use: **Two tablets per day**

Cataplex® D provides 40 mcg (1,600 IU) of vitamin D.

- Supports healthy immune system response function*
- Encourages healthy calcium absorption from the intestinal tract into the blood*
- Supports and maintains healthy bone density*
- Excellent source of vitamin D and antioxidant vitamin A

Assessment of Nutritional Status on GLP-1 RAs

In Office/Physical Exam

- **Signs/symptoms:** fatigue, weakness, loss of lean muscle mass, dry skin, thinning hair, brittle nails, poor immune function, GI symptoms, numbness, tingling
- Dietary recall or food journaling
- **Lab studies:** Complete blood count (CBC), comprehensive metabolic panel (CMP), 25-OH vitamin D, iron panel with ferritin, serum B_{12} and folate, RBC magnesium
- DEXA bone density scan

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