PRESCRIPTION MONOGRAPH

Compounded Active Ingredients: Ascorbic Acid
Form: Oral Capsule

Drug Class: Water-soluble vitamin / antioxidant.

Mechanism of Action[1,2]:
Ascorbic Acid is intended to

- Serve as a cofactor for prolyl and lysyl hydroxylase, stabilizing collagen and connective tissue.
- Reduce ferric (Fe^{3+}) to ferrous (Fe^{2+}) iron in the gut, improving iron absorption.
- Scavenge reactive oxygen species and regenerates vitamin E.
- Enhance leukocyte function and promote epithelial barrier integrity to support immune defense.
- Cofactor in dopamine → norepinephrine conversion.

Indications Commonly Prescribed for:

- Treatment and prevention of scurvy.
- Patients with inadequate intake, increased requirements, or malabsorption.
- Iron-deficiency anemia (to improve iron absorption).

Before Use: Let your health care provider know if you have any medication allergies before you take this compounded preparation. Let your health care provider know if you have any liver or kidney problems. Let your healthcare provider know of all supplements you are currently taking.

Contraindications:

- Hypersensitivity to ascorbic acid.
- Caution in hemochromatosis, thalassemia, or sideroblastic anemia due to enhanced iron absorption.

Cautions: Let your Healthcare provider know if you experience any adverse side effects.

How to Use: This compounded preparation is in the form of an oral capsule. Swallow the capsule whole with a glass of water. Do not chew or crush the capsule. If you miss a dose, take as soon as you remember, but not at the time for the next dose. Desired results may take up to several weeks.

Warnings and Precautions:

- High-dose oral use: May cause GI upset and diarrhea; absorption plateaus at doses >1 g/day.
- Kidney stones: Excessive intake may increase risk of oxalate nephrolithiasis.

Adverse Reactions:

- Common:
  - Nausea
  - Abdominal cramps, Diarrhea
- Serious, but Rare:
  - Hemolysis
  - Oxalate nephropathy

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Interactions:

- Iron supplements: Ascorbic acid enhances absorption.
- Aluminum-containing antacids: Vitamin C increases aluminum absorption; use caution in renal impairment.
- Chemotherapy agents: High-dose vitamin C may alter activity of certain drugs (cisplatin, doxorubicin, bortezomib).
- Aspirin/NSAIDs: Chronic use may reduce vitamin C levels.

Use in Specific Populations:

- Pregnancy: Safe at recommended dietary doses; high-dose safety not established.
- Lactation: Excreted in breast milk; safe at normal doses.
- Pediatrics: Safe within dietary allowance; high-dose use not routinely recommended.
- Renal impairment: Use caution with high doses due to oxalate accumulation risk.

Storage:

- Store in original container at room temperature (up to 30°C or 86°F)
- Store in a cool dry place away from heat, sunlight, and moisture

Monitoring Parameters:

- Clinical: Resolution of scurvy symptoms (gingival bleeding, petechiae, impaired wound healing).
- Laboratory: Vitamin C plasma levels rarely needed; consider monitoring in malnutrition, dialysis patients, or high-dose IV use.
- Renal function: Monitor in prolonged high-dose therapy.

Citations:

1. Yin Y, Wu S. Ascorbic acid alleviates rheumatoid arthritis by inhibiting the production of autoantibodies. *Cell Commun Signal*. 2024;22(1):373. Published 2024 Jul 24. doi:10.1186/s12964-024-01756-x
2. Reang J, Sharma PC, Thakur VK, Majeed J. Understanding the Therapeutic Potential of Ascorbic Acid in the Battle to Overcome Cancer. *Biomolecules*. 2021;11(8):1130. Published 2021 Jul 31. doi:10.3390/biom11081130