

FeronephTM-0

Ferrous Ascorbate, Folic Acid, Methylcobalamin,
Biotin, Calcium Pantothenate & Multivitamin Tablets

Effective & Tolerable Oral Iron Supplement

Product Description:

Each film coated tablet contains

- Ferrous Ascorbate equivalent to elemental iron 100 mg
- Folic Acid 10 mg
- Methylcobalamin 500 mcg
- Biotin 300 mcg
- Calcium Pantothenate 6 mg
- Vitamin B1 2 mg
- Vitamin B2 3 mg
- Vitamin B3 25 mg
- Vitamin B6 10 mg

General Information:

Ferrous Ascorbate is a synthetic molecule of ascorbic acid and iron. Ascorbic acid enhances absorption of iron. Ascorbic acid reduces ferric iron to ferrous iron, which remains soluble even at neutral pH. Ferrous form is absorbed thrice as much as ferric form of iron

Ascorbic acid is an essential nutrient in human diets, and necessary to maintain connective tissue and bone. Its biologically active form, vitamin C, functions as a reducing agent and coenzyme in several metabolic pathways. Ascorbic acid is considered an antioxidant.

Iron is an essential trace mineral in human nutrition. It is involved in the entire process of respiration, including oxygen transport and electron transport. The principal goal of respiration is the production of biologic energy.

Folic acid

Folic acid is important in DNA synthesis/cell division and helps to convert vitamin B12 into its coenzyme form. It is also essential for the interconversion of amino acids (i.e., homocysteine to methionine). It is mainly contained in green vegetables, fruits, and meat. The RDA for folic acid is 400 mcg/d for adult males and females.

In dialysis patients, it is cleared significantly during hemofiltration–hemodiafiltration and high-flux as well as low flux haemodialysis but also with peritoneal dialysis. It has been estimated that the serum levels fall by 37% post-dialysis and an oral supplement containing 6mg of folic acid can reconstitute the serum levels.

As the intestinal absorption is inadequate, the recommended dose for dialysis patients is 1 mg/d in order to prevent deficiency and 5–10 mg/d for the potential treatment of hyperhomocysteinemia.

Folic acid therapy reduces the risk of cardiovascular disease by 15%, especially among those with treatment duration over 24 months and a reduction in serum homocysteine levels over 20%.

Methylcobalamin

Methylcobalamin is a type of Vitamin B12. This vitamin is necessary for DNA and RNA syntheses. The RDA for vitamin B12 is 2.4 mcg/d for adult males and females, including the dialysis patients. There are studies showing impressive homocysteine reductions (from 11 to 30%) that may even include normalization of its serum levels in haemodialysis and peritoneal dialysis patients

Biotin

Biotin (vitamin H–B8) participates in energy metabolism as a coenzyme that carries CO₂ and participates in the tricarboxylic acid cycle, in gluconeogenesis, in the metabolism of fatty acids, and the breakdown of amino acids. It can be synthesized by bacteria in the gastrointestinal tract. The RDA for biotin is 30 mcg/d for healthy adult males and females dialysis patients.

Calcium Pantothenate(Pantothenic acid)

Pantothenic acid (B5) takes part in the synthesis of many lipids, neurotransmitters, steroid hormones, and haemoglobin. It is a part of the coenzyme A and its deficiency rarely occurs as it is contained in a large range of nutritional categories. The RDA for pantothenic acid is 5 mg/d for both adult males and females.

Vitamin B1 (Thiamine)

Vitamin B1 is a part of the coenzyme thiamine pyrophosphate that promotes the conversion of pyruvate to acetyl CoA. It is useful in many activities such as the conduction of nerve impulses, muscle function or stimulation of appetite.

Vitamin B2 (Riboflavin)

Vitamin B2 is necessary for the release of energy from nutrients and supports normal vision and healthy skin. The RDA for riboflavin is 1.3 mg/d for adult males and 1.1 mg/d for adult females.

Vitamin B3 (Nicotinamide)

Vitamin B3 is the amide of nicotinic acid (vitamin B3/niacin) that can also be synthesized from the amino acid tryptophan. Higher vitamin B3 doses improve lipid profile by increasing serum HDL and reducing LDL cholesterol fraction and serum triglycerides. The RDA for vitamin B3 is 16 mg/d for adult males and 14 mg/d for adult females. There is a growing interest on the efficacy of nicotinamide for the

treatment of hyperphosphatemia not as a phosphate binder, but rather as a direct inhibitor of the Na–Pi–2b sodium-dependent transporter in the gastrointestinal tract.

Pyridoxine (B6)

Pyridoxine (B6) is a family of compounds that, unlike other water-soluble vitamins, can be stored in muscles. It is important for the metabolism of amino acids and fatty acids and influences cognitive development, immune function as well as steroid synthesis.

In dialysis patients, it has been shown that pyridoxine supplementation may correct the high levels of total cholesterol, triglyceride, and LDL and the low HDL. The RDA for vitamin B6 is 1.3 mg/d for adult males and females through age 50.

Indication & Usage:

Used in preventing and treating iron-deficiency anaemia.

Dosage and Administration:

1 tablet BID before or after food

Mechanism of action:

Ferrous ascorbate has the advantage of providing both ferrous ion and ascorbate in the same compound.

Addition of ascorbic acid converts the ferric form to ferrous form thus making it absorbable from duodenum and upper jejunum, resulting in considerable enhancement of the absorption of iron. It has been demonstrated that Fe(II) ascorbate is less easily oxidized than Fe(II) in ferrous sulphate. Absorption of ferrous ascorbate averaged 52% higher than ferrous sulphate in subjects with iron deficiency (ID). Thus when administered as ferrous ascorbate, Fe(II) salt is more resistant to oxidation at alkaline pH, deliver maximum amount of ferrous iron to the duodenal brush border and at the same time produces minimum GI adverse effects.

Pharmacokinetic:

After oral administration, the iron is predominantly absorbed in the upper jejunum and duodenum. About 90% of the administered dose is bound to plasma proteins. The iron as ferrous forms bind with transferrin and transported to the spleen, liver and bone marrow. The GI absorption of iron is very low due to systemic recycling of iron. About 1 mg/day of endogenous iron is eliminated in the urine, skin and faeces.

Use in Specific Population:

Pregnancy: If taken as recommended doses, Ferrous ascorbate is likely safe during pregnancy.

Nursing Mother: Ferrous ascorbate is likely safe in lactating mothers, in recommended doses.

Paediatric Use: The dosage and duration should be as prescribed by a paediatrician

Contraindication: Ferrous ascorbate is contraindicated in patients with iron supplements allergy, patients with hemosiderosis, haemolytic anaemia, active infections and hemochromatosis

Drug Interaction:

Ferrous ascorbate may interact with barbiturates, diphenylhydantoin, primidone, tetracycline group of drugs, quinolones, penicillamine, L-dopa, Methyldopa, bisphosphonates and calcium salts.

Side Effects:

Most common side effects of Ferroust Ascorbate are Nausea, Vomiting, Constipation, Diarrhoea & Abdominal pain

