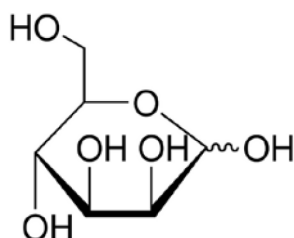


D-Mannose Powder – 3 oz. (85 g)

TECHNICAL SUMMARY

D-mannose is a simple sugar that is taken up in the GI tract and rapidly excreted in the urine without affecting blood sugar regulation.* D-mannose helps to support a normal environment within the bladder by maintaining a healthy mucosal lining and promoting proper elimination.* Clinical studies indicate that D-mannose can help to maintain normal urinary tract health when used regularly.*

Structure formula:



Chemical name: D-Mannose or D-mannoseis, D-mannopyranose, seminose, or carubinese. Chemical formula is $C_5H_{11}O_5CHO$. D-mannose is a C-2 epimer of D-glucose.

Allergen and Additive Disclosure: Not manufactured with yeast, wheat, gluten, soy, milk, egg, fish, shellfish, or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Pure Powder.

ROLE AS NUTRIENT/FUNCTION

Dietary sources: D-mannose can be found in small amounts in cranberries, black currants, peaches, apples, mangoes, green beans, tomatoes, and aloe vera. D-mannose, a constituent of hemicellulose, mannans, and glycoproteins, can be found in these complex molecules in soy, baker's yeast, and eggs.

Structural and functional role: Mannose is an important structural and functional element of some proteins and phospholipids present in multiple tissues, including connective tissues.* Laboratory experiments have demonstrated that it can stick to undesirable particles in the urine, inhibiting their attachment to uro-epithelial cells, and thus can help maintain a healthy bladder lining.*

NATUROKINETICS®

Liberation: D-mannose is easily soluble in water, at 17 °C, 248 g of D-mannose can be dissolved in 100 g water to give a 71 wt% solution.

Absorption: D-mannose is absorbed in the small intestine. Following oral administration in healthy volunteers, blood D-mannose levels increase in a dose-dependent manner with peak concentrations achieved at T_{max} of 1 to 2 hours (Figure 1).

Distribution: Absorbed D-mannose is predominantly incorporated into glycoproteins, particularly in the liver (70%), intestine (11%), and serum

Supplement Facts

Serving Size 1 Level Teaspoon (approx. 2 g)
 Servings Per Container about 43

	Amount Per Serving	% Daily Value
Calories	10	
Total Carbohydrate	2 g	< 1%*
Total Sugars	2 g	†
D-Mannose	2 g (2,000 mg)	†

* Percent Daily Values are based on a 2,000 calorie diet.

† Daily Value not established.

Other ingredients: None.

- **Cleanses the Bladder***
- **Supports a Healthy Urinary Tract***
- **Corn Free**

SUGGESTED USAGE: Take 1 level teaspoon 1 to 2 times daily with water or unsweetened juice, or as directed by your healthcare practitioner.

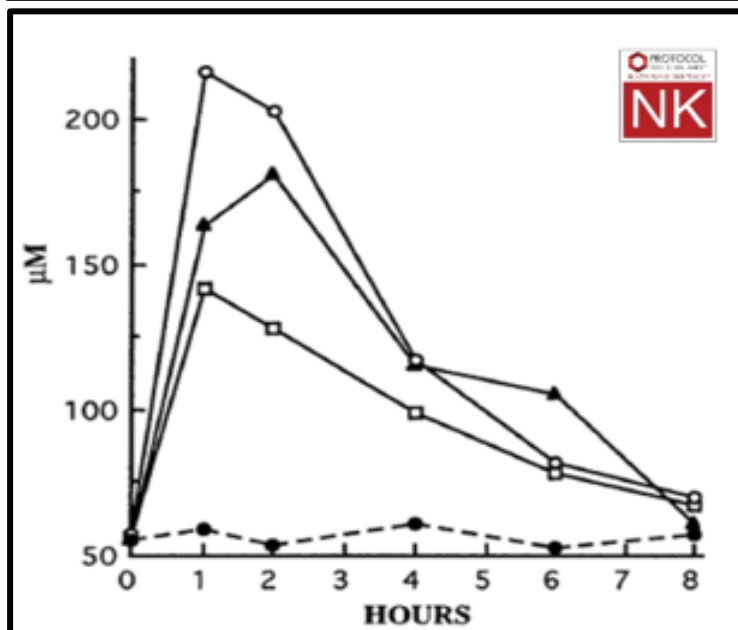


Fig. 1. Blood mannose concentrations after a single dose of mannose in 3 subjects. Doses of (0.07, □), (0.14, ▲), and (0.21, ○) g of mannose/kg body weight or placebo (●).

(15%) within the first hour of supplementation, with less than 10% appearing in the kidneys.

Metabolism: D-mannose is phosphorylated by hexokinase into mannose-6-phosphate (M-6-P), and is also transformed to fucose, followed by integration into glycoproteins.

Elimination: D-mannose is excreted in urine with a half-life of approximately 4 hours.

CLINICAL VALIDATION

- In a randomized, comparator-controlled clinical trial with 308 women, supplementation with D-mannose for six months (2 g mannose powder in 200 ml of water daily) resulted in significantly healthier urinary tract.*
- In a pilot, open label clinical trial with 43 women followed for 12 months, supplementation with a solution of 1.5 g D-mannose twice daily (sodium bicarbonate, sorbitol, and silicon dioxide were also part of the product) for three days followed by 1.5 g D-mannose per day for ten days resulted in an improved quality of life score.* One month after the beginning of D-mannose supplementation, half of the women were randomized to receive additional D-mannose supplementation for one week per month every other month. This group reported a healthier urinary tract when compared to the women who did not received the second round of D-mannose.*
- Additional clinical trials have investigated short-term D-mannose supplementation (1.5 g twice daily for three days) in adult women and observed improvements in urinary comfort, reduced frequency and urgency of urination, and general support for quality of life parameters.* These studies suggest that D-mannose may support the maintenance of urinary health and well-being when used consistently over short durations.*

SAFETY INFORMATION

Tolerability: D-mannose is generally well tolerated when used as recommended. Gastrointestinal complaints associated with D-mannose supplementation exceeding 2 g/day may include loose stool and bloating.

Contraindications: Theoretically, D-mannose could increase levels of glycosylated hemoglobin A1c. Monitoring of patients with diabetes mellitus is recommended.

INTERACTIONS

Drug Interactions: No known interactions.

Supplement Interactions: No known interactions.

Interaction with Lab Tests: D-mannose may affect the level of glycosylated hemoglobin A1c.

STORAGE

Store in a cool, dry environment in a tightly sealed container.