

## Manganese

Trace element

### DESCRIPTION

Douglas Laboratories® Manganese supplement provides 8 mg of elemental manganese per vegetarian capsule. Manganese (Mn) plays an important role in several physiologic processes as a constituent of multiple enzymes and activator of other supportive enzymes.‡

### INDICATIONS

- Connective tissue and bone support‡

### FUNCTIONS

Manganese is an essential trace element for growth, reproduction, bone, cartilage, and glucose tolerance. It is the preferred cofactor of glycosyltransferases, enzymes that are required for the synthesis of proteoglycans needed to form healthy cartilage and bone. It is also the essential cofactor of the mitochondrial form of the antioxidant enzyme superoxide dismutase (SOD). SOD is a key antioxidant enzyme that eliminates superoxide anions generated during normal energy metabolism or from environmental toxins. Mitochondrial SOD activity is dependent on sufficient dietary intake of manganese.

Manganese-deficient animals may be characterized by impaired insulin production, alterations in lipoprotein metabolism, an impaired oxidant defense system, and perturbations in growth factor metabolism. Certain human populations may be susceptible to manganese deficiency.‡

### FORMULA (#202539)

#### 1 Vegetarian Capsule Contains:

Manganese (as manganese aspartate and manganese citrate) ..... 8 mg

Other ingredients: Hydroxypropyl methylcellulose (capsule) and microcrystalline cellulose.

**Non-GMO, Gluten-Free**

### SUGGESTED USE

One tablet daily as a dietary supplement, or as directed by a healthcare professional.

### WARNING

If you are pregnant or lactating, taking any medication, or have any health condition, particularly liver disease, consult your health professional before use. Do not exceed the suggested daily dose unless recommended and monitored by your health professional.

### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

### REFERENCES

El-Yazigi A, Hannan N, Raines DA. *Diabetes Res* 1991;18:129-134.

Finley JW, Johnson PE, Johnson LK. *Am J Clin Nutr* 1994;60:949-955.

Gibson RS, MacDonald AC, Martinez OB. *Hum Nutr Appl Nutr* 1985;39:43-52.

Malecki EA, Huttner DL, Greger JL. *Biol Trace Elem Res* 1994;42:17-30.

Nielsen FH. *Modern Nutrition in Health and Disease*. 1994:269-286.

Robberecht HJ, Hendrix P, Van Cauwenbergh R, Deelstra HA. *Z Lebensm Unters Forsch* 1994;199:446-448.

Rossander-Hulten L, Brune M, Sandstrom B, Lonnerdal B, Hallberg L. *Am J Clin Nutr* 1991;54:152-156.

**For more information on Manganese visit [douglaslabs.com](http://douglaslabs.com)**

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‡These statements have not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure, or prevent any disease.

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