

Manganese Overview

Why We Need It?

Manganese is an essential trace mineral involved in metabolism, bone formation, and antioxidant defense. It plays a crucial role in enzyme activation, wound healing, and brain function. Although needed in small amounts, it is vital for overall health and well-being.

Functions in the Body

Metabolism Support: Helps metabolize carbohydrates, proteins, and fats.

Bone Health: Supports bone mineralization and reduces osteoporosis risk.

Antioxidant Defense: A key component of superoxide dismutase (SOD), an enzyme that fights oxidative stress.

Wound Healing: Aids in collagen formation for tissue repair.

Brain Function: Supports neurotransmitter activity and cognitive health.

Blood Sugar Regulation: Plays a role in insulin production and glucose metabolism.

Daily Recommended Intake (RDI):

Infants (0-6 months): 0.003 mg/day

Children (1-8 years): 1.2-1.5 mg/day

Adolescents (9-18 years): 1.6-2.2 mg/day

Men (19+ years): 2.3 mg/day

Women (19+ years): 1.8 mg/day

Pregnant Women: 2.0 mg/day

Lactating Women: 2.6 mg/day

Upper Limit (UL): 11 mg/day (excess intake may cause neurological issues).



Benefits of Supplementation

- Supports bone density and joint health.
- Enhances antioxidant protection, reducing inflammation.
- Aids in metabolism and energy production.
- Helps with wound healing and tissue repair.
- Supports brain function and may reduce neurodegenerative risks.

Most Bioavailable Form

Manganese Gluconate: Well-absorbed and commonly used in supplements.

Manganese Citrate: Highly bioavailable form.

Manganese Sulfate: Often used in research and medical applications.

Manganese Chelates (e.g., Manganese Bisglycinate): Easily absorbed and gentle on digestion.

Best Food Sources

Nuts & Seeds: Almonds, pecans, walnuts, pumpkin seeds.

Whole Grains: Brown rice, quinoa, whole wheat, oats.

Legumes: Lentils, chickpeas, black beans.

Leafy Greens: Spinach, kale, Swiss chard.

Fruits: Pineapple, blueberries, bananas.

Tea: Black and green tea contain significant amounts of manganese.

Conclusion

Manganese is essential for metabolism, bone health, and antioxidant protection. While deficiency is rare, maintaining adequate intake through a balanced diet supports overall health. Supplementation may be beneficial for those with increased needs, but excessive intake should be avoided due to potential toxicity.