




Magnesium Threonate




1 g =
1 level scoop

For extemporaneous compounding only

OVERVIEW

- > Designs for Health Magnesium Threonate utilises Magtein®, a 100% pure, easy to dissolve, excipient free, virtually tasteless powder.
- > Magtein® was developed at the Massachusetts Institute of Technology and the Tsinghua University in Beijing with the aim of producing a unique and highly bioavailable form of magnesium capable of crossing the blood brain barrier. The compound consists of magnesium and the L-isomer of threonic acid L-Threonate which is a metabolite of ascorbic acid.
- > Magnesium is the second most abundant cation of the intracellular fluids of the body and is involved in over 300 biochemical activities.^{1,6}
- > Recommended dosing is 1500-2000 mg daily (25 mg/kg/day) (providing 114-152 mg elemental magnesium).



No Added
Gluten



Free From
Excipients and
Flavours



GMO-Free



Vegan Friendly



No Added
Dairy



No Added
Soy

Active Ingredients (per scoop)

One level scoop provides 1 g Magnesium Threonate providing a minimum of 76 mg elemental Magnesium

Pack Size 60 g (scoop enclosed)

Scoop Size 1 g per level scoop

Doses Per Tub 60 doses per tub

Excipients

Excipient free

Directions for Use

Please use as directed by your health practitioner. For extemporaneous compounding only.

Allergen Information

No added: gluten, dairy, lactose, soy or nuts.

Prescribing Information:

Contraindications:

- Renal failure.¹
- Heart block.¹

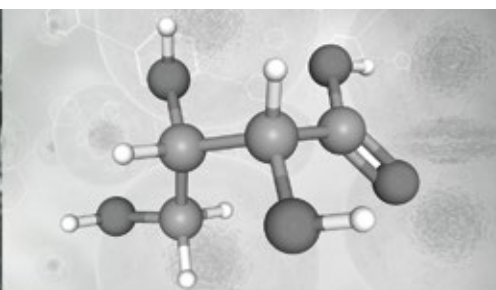
Cautions:

- Caution advised with use of magnesium in individuals with renal dysfunction.¹
- Excessive intake of magnesium may cause diarrhoea and gastric irritation.^{1,5}
- Excessive intake of magnesium may result in reduced calcium levels.¹
- Magnesium may potentiate the therapeutic effect of calcium-channel blockers and neuroblocker medications.¹
- Long term use of loop and thiazide diuretics increase urinary magnesium excretion.^{1,5}
- Magnesium may decrease absorption of fluoroquinolones. Separate doses by at least 2 hours before and 4 hours after oral magnesium.¹

Warnings

If symptoms persist, talk to your health professional. Dietary supplements should not replace a balanced diet.

References supplied on request.



EDUCATION

The human body contains around 24g of Magnesium, and it is present in the serum, muscles and soft tissues, bones and extracellular fluid. It is also found in the cerebrospinal fluid where it regulates various brain functions, mainly related to excitatory neuronal function.¹¹

Magnesium is a critical regulator of the activity rate of the Sodium-Potassium ATPase pump (Na⁺, K⁺- ATPase pump)² which is required for removal of sodium from inside the cell in exchange for potassium (i.e., brings potassium back into the cell despite the chemical gradient favouring potassium movement out of the cell).³ This makes Magnesium critical for maintaining the electrical potential of skeletal and cardiac muscles and nerves, and for neurotransmission across neuromuscular and neuronal junctions.^{2,3}

Further to regulating the activity of the pumps and therefore the electrical potential, Magnesium in the extracellular space facilitates optimal neurotransmitter binding at the neuronal receptor site.⁷

Magnesium is a calcium antagonist and competes with calcium for binding sites on calcium channels.⁸ Magnesium can displace calcium at N-methyl-D-aspartate (NMDA) glutamate binding/receptor sites preventing their activation.

NMDA receptor activation is associated with numerous biological outcomes such as synaptic plasticity, learning and memory, pain emergence and migraine, sleep^{6,9} and mood fluctuations.¹⁰

NMDA receptors are ion-channels that arbitrate the movement of calcium across synapses. An increase in calcium influx causes glutamate release and consequent excitatory neurotransmission in the central nervous system.^{6,9,11} Excessive calcium influx in the brain may also cause disruption to the blood brain barrier, inflammation and oxidative stress.¹¹

Magnesium can also agonise GABA_A receptors inhibiting neuronal excitation.¹¹

Magtein® has been trialled in both preclinical and clinical studies.^{12,13}

References supplied on request.