

## - Mind and body / Lymphatic System

### Magnesium for body and mind

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IN 2019, one in five New Zealanders aged 15 and over were diagnosed with a mood disorder.



We know that the past two years have been challenging and new research suggests nearly 60% of young people have experienced mood disorders postlockdown.

Magnesium plays an important role in enzymatic and physiological functions in the body including neuromuscular contractions, cardiac (heart) function, bone health and regulation of acid/alkaline balance, and it is key for energy production, muscle function, mood and calming the body.

Magnesium promotes healthy glucose metabolism and when we have more stable blood sugar levels, our mood is also better supported. In one 15year study involving 4637 young adults, higher intakes of magnesium were associated with healthy cardiovascular function and glucose utilisation.

This is not just in humans . . . animals also need this important mineral.

The initial symptoms of magnesium deficiency in cattle are nervousness, ears pricked, nostrils flaring, eyes alert and head held high. Cows suffer loss of appetite and, for dairy cows, a reduced milk production. This is also named Grass Tetany.

Cattle need a continuous supply of magnesium primarily to facilitate the numerous energygenerating reactions in their tissues and for the correct transmission of nerve pulses. There are two types of hypomagnesaemia recognised clinically: hypomagnesaemic tetany in calves, which appears to be due to a straightforward deficiency of magnesium in the diet, and lactation tetany, in which there may be a partial dietary deficiency but in which nutritional and metabolic factors reduce the availability, or increase the body loss, of magnesium. High levels of potassium or ammonia in the soil can impact absorption of this crucial mineral.

Some good sources of magnesium for humans include leafy green vegetables (especially spinach), legumes, nuts, seeds and whole grains. Pumpkin seeds, chia seeds, cashews, peanuts and oats all offer some magnesium also.

Unfortunately, magnesium deficiency is becoming increasingly common in New Zealand as a result of its intake decreasing over the years due primarily to an increased use of fertilisers and consumption of processed foods. Stress and exercise also deplete levels.

Accurately measuring the about 25g of magnesium present in the human body is more difficult than it might first appear. About 60% of it is stored in the bone, while the remaining 40% is found primarily in the muscles and soft tissue.

As a result, traditional blood tests are a poor indicator of overall magnesium levels. Red blood cell (RBC) magnesium tests performed through a GP are a more accurate tool.

Supplementing with magnesium can be a safe way to support the nervous system, reduce cramping and correct deficiencies. There are different forms of magnesium and each provides slightly different benefits.

Citrate — magnesium citrate is a chelated form of magnesium bound to citric acid. It is a highly absorbable form which pulls water into the bowels, giving it more of a laxative effect which can be useful for those with constipation.

Citrate/malates — a type of magnesium bound to citric acid and malic acid. Malic acid is a compound naturally found in fruits and vegetables and when bound to magnesium, creates magnesium malate. Malate is involved in the Krebs cycle (energy production cycle within every cell). For those with a lack of energy, a magnesium malate supplement may be effective for helping with chronic fatigue syndrome and/or fibromyalgia.

Glycine — (also known as magnesium chelate, magnesium diglycinate, magnesium biglycinate, magnesium glycinate) is a highly absorbable form of magnesium. It is less likely to cause gastrointestinal symptoms and reduce the laxative effect. This form is useful for diabetics and those with blood sugar issues. Glycine is a calming amino acid for the body and mind and is recommended for stress and muscle relaxation.