The Abundance of Magnesium

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Magnesium is required for more than 300 metabolic reactions in the body, which means we require a constant supply of magnesium to function optimally.

You may be thinking, "how do you know if you have enough magnesium?" If you are thinking of asking your GP for a blood test, then think again. Over 50% of magnesium is stored in the bones and the rest in soft tissues. Only 1% is in the blood. Now you can see why there is little benefit in having a blood test for magnesium.

Magnesium deficiency is rare, as this is tightly regulated by the kidneys through reabsorption and filtering excess amounts through the urine.

By the time the blood markers show deficiency in magnesium there will have been chronic symptoms including pins and needles, muscle cramps/twitching, nausea and loss of appetite, which could last years.

Pathologies that impact absorption are irritable bowel disease such as Crohn's, ulcerative colitis or coeliac disease. Underlying conditions such as alcoholism, diabetes type 2 and certain medications such as proton pump inhibitors known as Omeprazole may also impact absorption.

Magnesium is an essential electrolyte, along with sodium, potassium, and calcium. Intense exercise which involves excess sweat will need to be replenished through an electrolyte sports drink to enable a balance of electrolytes.

Most health shops sell these as sachets or liquids and can be taken during and after sport to ensure adequate levels are topped up. A natural source is coconut water, and this is delicious with added honey and fresh juice for a natural sports drink.

Electrolytes are essential in regulating blood pressure, muscle contraction, electrical pulses essential for heart health and the nervous system. Any excess sweating, vomiting and diarrhoea will require an electrolyte sachet or drink to replenish levels.

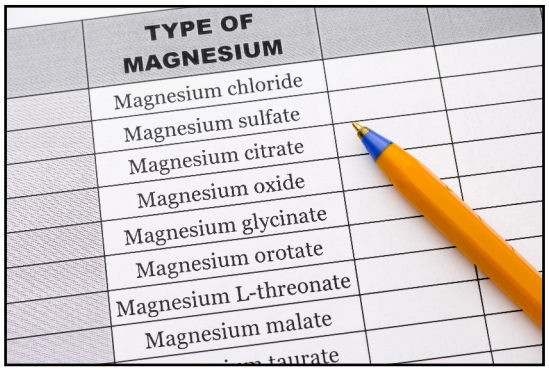
Magnesium contributes to bone density and it is the forgotten mineral with osteoporosis or osteopenia.

Without magnesium, vitamin D is stored in the body and is not used. The body depends on magnesium to convert vitamin D to its active form which enables the absorption of calcium to protect bone health.

Now for the complex part of magnesium, which has so many different metabolic reactions in the body.

Metabolic means the biochemical process to build up substances or to breakdown substances.

There are different types of magnesium that are chelated (bound to certain chemicals to help absorption and outcomes).



For example, magnesium malate is best for energy, magnesium citrate for constipation, magnesium glycinate for sleep.

There are at least 300 metabolic reactions that require magnesium, plus bones and part of our electrolytes. Now you can see the vast demand for magnesium in the body.

Therefore, it makes sense to choose the right type of magnesium that is chelated for your aim.

We have not even discussed stress yet. Stress is the biggest reason for a depletion in magnesium and the two are correlated with elevated levels of stress and low levels of magnesium.

Walter Cannon, the American physicist, coined the phrase, "fight or flight", which is the body's stress response, and "homeostasis" meaning balance. Ideally, we all need to be in "homeostasis" most of the time.

Magnesium is required to support the nervous system through times of stress by supporting neurotransmitter production, release of energy and adrenalin. In addition, magnesium is also important to lower the stress response to return to "homeostasis".

Chronic stress can lead to magnesium deficiency and symptoms include tremors, headaches, anxiety, panic attacks, insomnia and fatigue.

Fibromyalgia, attention deficit hyperactivity disorder (ADHD) and Tourette's syndrome are a few diagnoses that have been linked to magnesium deficiency.

Hypothyroidism has been linked to mineral deficiencies including magnesium, as magnesium plays a pivotal role in preventing oxidative stress and inflammation.

Increased oxidative stress causes alterations in DNA, and repair and degradation of cells, which can lead to impaired cell signalling and dysregulated hormone balance. This may trigger thyroid anti-bodies and lead to autoimmune thyroid disease such as Hashimoto's disease.

A study found supplementing magnesium for 2-4 years along with selenium, and Coenzyme Q10 showed a significant drop in antibodies and normalisation of thyroid health.

Also, magnesium is essential to transport iodine to the thyroid. Most people think of iodine as the main solution for hypothyroidism but without Magnesium, iodine will not get into the cells.

Highest Food Sources of Magnesium

- Spinach
- Butter beans
- Pumpkin seeds
- Tuna
- Brown Rice
- Almonds
- Avocado
- Dark Chocolate
- Tofu
- Banana

Nutrition Tips to Top Up Magnesium

- 1 mug of Epsom Salt Baths in a bath, soak for 20 minutes
- 4 cups of dark green leafy vegetables per day, as part of a smoothie, soup, or meal
- 1 tbsp seeds per day, sprinkled over porridge or salads
- Eliminate or reduce caffeine, alcohol, and red meat
- Moderate exercise
- Meditation

Magnesium Super Smoothie

Ingredients
2 handfuls of spinach
2 tbsps pumpkin
¼ block of silken tofu
¾ glass of coconut water
½ frozen banana
Cacao nibs 1 tsp

Method
Blend and serve all ingredients apart from cacao nibs. Pour into glass and sprinkle cacao nibs on top.

Subtle signs of low magnesium are calf cramps, pins and needles, muscle spasms and loss of appetite. At Melissa Cohen Nutrition we offer urine tests that are non-invasive and can be taken in the privacy of your own home. These are sensitive tests and look at your body's demand of certain vitamins and minerals including magnesium. Based on your test results you will re-ceive a personalised nutritional and supplementation plan.

If you would like to take advantage of our MOT Health Check for Thyroid UK members, which includes testing and personalised nutrition suggestions, please send us an email. We look forward to collaborating with you towards optimal nutrition and checking your magnesium levels.

In the meantime, follow us on Instagram: @melissacohennutrition
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