

Anette Harbech Olesen

The Importance of **Magnesium**





Anette Harbech Olesen
is a prominent Danish writer and blogger on food, nutrition and health issues. She has been educated in these areas in Denmark as well as the USA. Anette has published a number of books, and she both lectures and teaches. Furthermore, she actively blogs about food and health issues on the popular site the www.madforlivet.com

List of content

The importance of Magnesium	5
Magnesium – the overlooked mineral	6
Magnesium in the body	9
The reason we do not get enough magnesium	12
Magnesium in our food	14
Symptoms of magnesium deficiency	18
Test yourself for magnesium deficiency	20
Magnesium as a supplement	22
No calcium without magnesium	25
Magnesium and the heart	27
Recipes for magnesium rich food	31
Links	33
References	35

This book shouldn't be used as a substitute for medical treatment or diagnosis. If you have experienced any long term symptoms or health issues, it's important that you consult your GP.



The importance of Magnesium

5

Magnesium is involved in more than 300 different processes within our body. Just 50-60 years ago magnesium appeared in our diets naturally through cabbage, corn, and beets. In the past we could obtain around 50 mg of magnesium by just eating a kale salad. Today a dish of kale does not even contain 10-20 mg.¹ How can this deplorable development be explained? As I see it; a decreasing respect for quality foods as a basis for a healthy and balanced life as well as a lack of focus on the importance of micronutrients in our food.

In most European countries the importance of magnesium for vital bodily functions is not recognised. Unfortunately, a lack of magnesium may influence your health negatively since it is essential for the nervous system and all muscular activity. The generation of energy in our cells, as well as our memory, our heart and bones, are all dependent on sufficient levels of magnesium. The decreasing levels of magnesium in our food combined with a - for many people - stressful lifestyle that does not emphasise high quality food have resulted in a widespread lack of magnesium in Western societies - especially among the elderly.²

The first signs of insufficient levels of magnesium in our bodies are unrest and cramps in the legs, a feeling of decreased memory, apathy, confusion, heart conditions and high blood pressure. Circulatory disturbances, loss of appetite, nausea, lethargy, depression, and insomnia can also be related to lack of magnesium. If you can relate to any of these symptoms, they may be treated by simply conducting a few diet changes and adding a high quality magnesium supplement every day. This book gives an overview of the importance of magnesium, how to easily discover if you do not have enough of it, and provides easy steps to remedy a potential lack of magnesium. Furthermore it gives plenty of inspiration for dietary changes that can ensure you more magnesium through delicious and magnesium rich dishes.

Magnesium - the overlooked mineral

Magnesium is essential for a well functioning body and for our health and inner balance. Most importantly, magnesium is a crucial component for muscle activity and for the nervous system. The general importance of this mineral can roughly be illustrated by 5 categories.

- 1 Magnesium is necessary for activating a large number of enzymes and constitutes an essential cofactor in more than 300 biochemical processes in the human body. Enzymes can be called the sparkles of life and they are vital for almost all bodily processes.
- 2 Magnesium is, together with the vitamin B family, a part of the body's energy generation. They play a part in all processes from digestion to activation of ATP. ATP is an abbreviation for Adenosin-Tri-Phosphate and acts as the most important source of energy for our cells.
- 3 As well as other micronutrients, the creation of protein is also dependent on sufficient magnesium levels. Without magnesium, no RNA or DNA. RNA and DNA are known as the blueprint of the human body.
- 4 Our heart can be challenged if there's not enough magnesium and you may experience arrhythmic heart beats. All other muscle activity in the body is also dependent on magnesium. Calcium facilitates muscle contraction; magnesium on the other hand facilitates relaxation of the muscles. If you lack magnesium, it can cause imbalances in your inner biochemical processes and symptoms like cramps, unrest, muscle pain, agitation, cardiac arrhythmias and seizures can occur.
- 5 The nervous system is deeply dependent on magnesium to be able to signal. It is magnesium that gives permission for a tiny bit of calcium to enter the nerve cell. Just sufficient to enable an electrical signal. Up to the brain and back again. Therefore, magnesium is essential for all nerve signalling processes, but also for functions that deal with memory, mood and perspective.



Magnesium in the body

As described on the previous pages magnesium is important to a multitude of bodily processes. Accordingly, a lack of this mineral is far from ideal and can have unfortunate consequences. The importance of being aware of the levels of magnesium is amplified by the relatively small reserves present in our bodies. The human body ideally contains just 21 – 28 grams of magnesium. About 60% is found in our bones and teeth; 38% is found in our cells, and the last 1 – 2% is found in our blood and cellular fluids.

However, our magnesium reserves are vulnerable to depletion – we can actually lose 25 % of them in just 25 days. In comparison, it would take us 3 years to lose an equivalent percentage of our calcium re-

We all have a fine electric balance in and around our cell membranes, which among other things provides for the vital transport of nutrients into the cells. This “electricity” is created by an optimal and sufficient balance between the minerals sodium, potassium, calcium and magnesium. Therefore the most vital bodily functions are deeply dependent on sufficient amounts of minerals, including magnesium.



serves. This is because the human body does not have the same kind of protective physiological mechanism against loss of magnesium as we do with calcium³. Perhaps the explanation for this lack of magnesium reserves relative to other minerals is to be found in dietary history of man. For millenia our diets contained lots of green vegetables, nuts, and grains. A dietary composition that is magnesium-rich and calcium poor. This order has now been reversed.

Today, the majority of the average European's energy intake comes from bread, meat and dairy products⁴. This is an unfortunate dietary composition, and its alarming lack of vegetables, wholegrain and essential fats may lead directly to depletion of vital nutrients including magnesium. The foods we regard as staples today are usually processed and refined. These processes remove many of their micronutrients. When conventional wheat, for instance, is ground and processed to wheat flour, more than 85% of its magnesium content disappears⁵.

In addition to the radical processing and refining of our food, our farming methods and use of phosphate fertilisers in conventional agriculture has been shown to significantly lower the mineral content of the crops. A 1988 study conducted by the US government showed that the typical American diet did not contain enough magnesium to meet the daily requirement⁶. It is quite a challenge to assimilate sufficient levels of micronutrients through food, no matter how varied it might be. However, it is both important and encouraging to note that organically grown crops have a higher content of micronutrients than conventionally grown ones⁷.



Why we lack magnesium

Magnesium deficiency is considered the most common nutrient deficiency in the Western world today. As mentioned above, such deficiency may lead to a long list of undesirable imbalances and symptoms.

Increased magnesium intake, either through food or through dietary supplements, may therefore be a natural as well as efficient remedy against nervous disorders, atherosclerosis, cardiac arrhythmia, hypertension, depression, memory loss, muscle cramps and bone degeneration.



Plenty of different foods contain magnesium, but various refining processes lower or completely remove most nutrients. In order to ensure you get the most nutrients from your diet, buy organic.

The trouble with conventionally grown crops is that they don't contain the same high levels of micronutrients that organically grown crops do⁸. Farmers today use chemicals like pesticides along with large amounts of phosphorus, and they cultivate the soil intensively. The crops are then refined and processed, often beyond recognition, resulting in great loss of nutrients. That organic farming and production methods are regarded as an alternative to "normal" or conventional practices today is a sad paradox. To me this shows a basic lack of understanding of the fact that wholesome foods are absolutely essential to our health⁹.

Another worrying aspect is our modern lifestyle. Stress, diuretics, contraceptive pills, tetracyclines and heart medication all inhibit our uptake and utilization of magnesium. A high intake of stimulants such as coffee, tea, alcohol, sugar and soft drinks, particularly cola, drains the body's magnesium reserves. Our high intake of meat and dairy products and low intake of organic vegetables likewise contributes to the disruption of our bodies' fine-tuned equilibrium resulting in deficiency. The fundamental lack of magnesium in our diets is the main reason for this e-booklet. It is meant to reveal how many different health issues are related to magnesium and how easily they can be remedied through dietary changes. The last part of this book is dedicated to delicious magnesium-rich foods that can get you started on a healthy and more balanced lifestyle.

Magnesium in our diet

Organic green vegetables like cabbage, spinach and Brussels sprouts are very rich in magnesium. Beets, potatoes and carrots, all kinds of beans and stone-ground, organic wholegrain flour, wheat germ, whole grains, almonds, Brazil nuts, and walnuts are all great sources of natural magnesium as well. Furthermore, coconut milk, coconut flour, coconuts, flax seeds, raisins, grapefruits, fish, meat, milk, seaweed flour and wheatgrass too – either as juice or freeze-dried powder – are all wonderful natural sources of magnesium and other micronutrients.



One of the great advantages of getting the right nutrients through a varied diet is that you ingest all that you need in a natural and easily absorbable form. Our cells recognize the organically bound nutrients and absorb and utilize them more readily than their inorganic counterparts found in many dietary supplements.

However, it may be difficult to get enough magnesium through diet alone, particularly if you feel stressed, drink lots of coffee and eat processed food. Stress may drain your body of minerals including magnesium¹⁰. Likewise, a lack of magnesium may be stressful for your body, which will then increase the production of stress hormones. These again will use up any magnesium reserves and rapidly consume new magnesium intake, thus causing a vicious circle of depletion¹¹.

Studies of the paleolithic diet ('stone age diet') have shown that the perfect balance between calcium and magnesium in the human body is a ratio of 2:1. Modern Americans and Europeans usually assimilate far more calcium than magnesium from their diet. We eat lots of meat, lots of white bread and lots of dairy products. We drink coffee and cola and don't generally get all that many vegetables or true wholegrain products. This means that many people get about three times as much calcium as magnesium. So rather than a 2:1 ratio, many of us have a ratio of 3:1, which may disturb our biochemical equilibrium.

Therefore, if you want to make sure to get enough magnesium, the best thing you can do is to eat plenty of organic vegetables¹², make your own bread from organic, stone-ground flour¹³, eat pulses, seeds, nuts and whole grains while cutting down on your intake of coffee, cola, sugar, dairy products and highly processed and refined food-stuffs¹⁴. In addition, many may benefit from supplementing the nutritious food with a high-quality magnesium supplement before going to bed at night.

Good magnesium-rich meals may include:

Almonds, cashews and walnuts
Spinach and green vegetables
All kinds of cabbage and broccoli
Coriander, dill and fennel
Black and white beans as well as kidney beans
Whole grains and bread baked from stone-ground flour
Oatmeal
Avocados
Potatoes
Seaweed
Brown rice
Wheatgrass juice or powder
Bananas, apples and grapefruits
Raisins
Flax seeds and other seeds and grains
Coconut, coconut fibers and coconut milk
Salmon and other fish
Garlic
Dairy products
Carrots and beetroots
Brazil nuts



Symptoms of magnesium deficiency

We all know the consequences of lacking oxygen, water or food – and they are serious. But when it comes to the lack of micronutrients such as magnesium, we are often unaware of the cause and even less aware of how serious the consequences may be. But even though micronutrients like vitamins and minerals are microscopical, as their name suggests, their significance is huge. Through history, deficiency in certain micronutrients has been known to cause diseases like beri-beri, scurvy, rickets, osteoporosis and many more. Considering how many ailments can originate from lack of micronutrients, it seems surprising how little attention medical authorities are paying this issue. Such ailments could be remedied simply, easily and cheaply by getting sufficient amounts of these essential vitamins and minerals. In her very interesting book “The Magnesium Miracle”, health specialist Carolyn Dean states that the lack of magnesium may lead to ailments and disorders as diverse as can be seen listed opposite:



Insomnia, poor sleep and difficulty falling asleep

Fatigue and lack of energy

Muscle tension, cramps and restless legs and muscles

Headache and Migraine

Cardiovascular diseases like atherosclerosis
and heart arrhythmia

High blood pressure

PMS - Pre menstrual syndrome

Constipation

Kidney stones

Osteoporosis

Premature aging

Depression

Anxiety

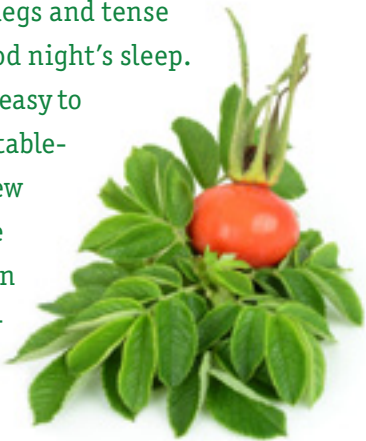
Irritability and mood swings

Test yourself for magnesium deficiency

This test will indicate whether you are magnesium deficient. It is not in itself sufficient to make a diagnosis, however, since many other factors than those mentioned here apply. Your age and lifestyle play a role, and so do illness, medication, stress, coffee, alcohol or cola intake etc. The most reliable way to determine deficiency is to have your GP do a test. You can also pay a private lab to do a micronutrient analysis. It should be mentioned, however, that for most people an ordinary magnesium supplement do them well. Any excess magnesium, which the body cannot absorb, will simply be excreted by the kidneys into the urine. However, extra attention must be given in relation to possible contraindications on conditions such as kidney diseases, metabolic disorders, urinary tract disorders or the disease myasthenia gravis.

An evening foot bath containing magnesium-rich Epsom salt provides magnesium for the body and may have a very soothing effect on restless legs and tense muscles. It may also promote a good night's sleep.

Foot baths are pleasant and it's easy to make a nice warm foot bath. Add a table-spoon Epsomsalt, together with a few drops of essential oil. Wait until the salt is completely dissolved and then sit with your feet in the bath for 15-20 minutes before going to bed. It is both relaxing and efficient.



When you use this little home test, you'll obtain 1 point for every symptom you have noticed in yourself. Consequently, your maximum score will be 10 points, which for most people will indicate severe magnesium deficiency. 5 points indicate mild deficiency and 6 – 9 points moderately severe deficiency. This preliminary do-it-yourself-test can be used to indicate whether you should consider attempting to increase your magnesium levels.

Muscle cramps or spasms	
Restless legs	
Muscle weakness	
Sleeplessness, nervousness or hyperactivity	
Hypertension/high blood pressure	
Irregular or rapid heart rate	
Constipation	
Epileptic seizures or spasms	
Breast tenderness and water retention	
Depression and confusion	
Your score	

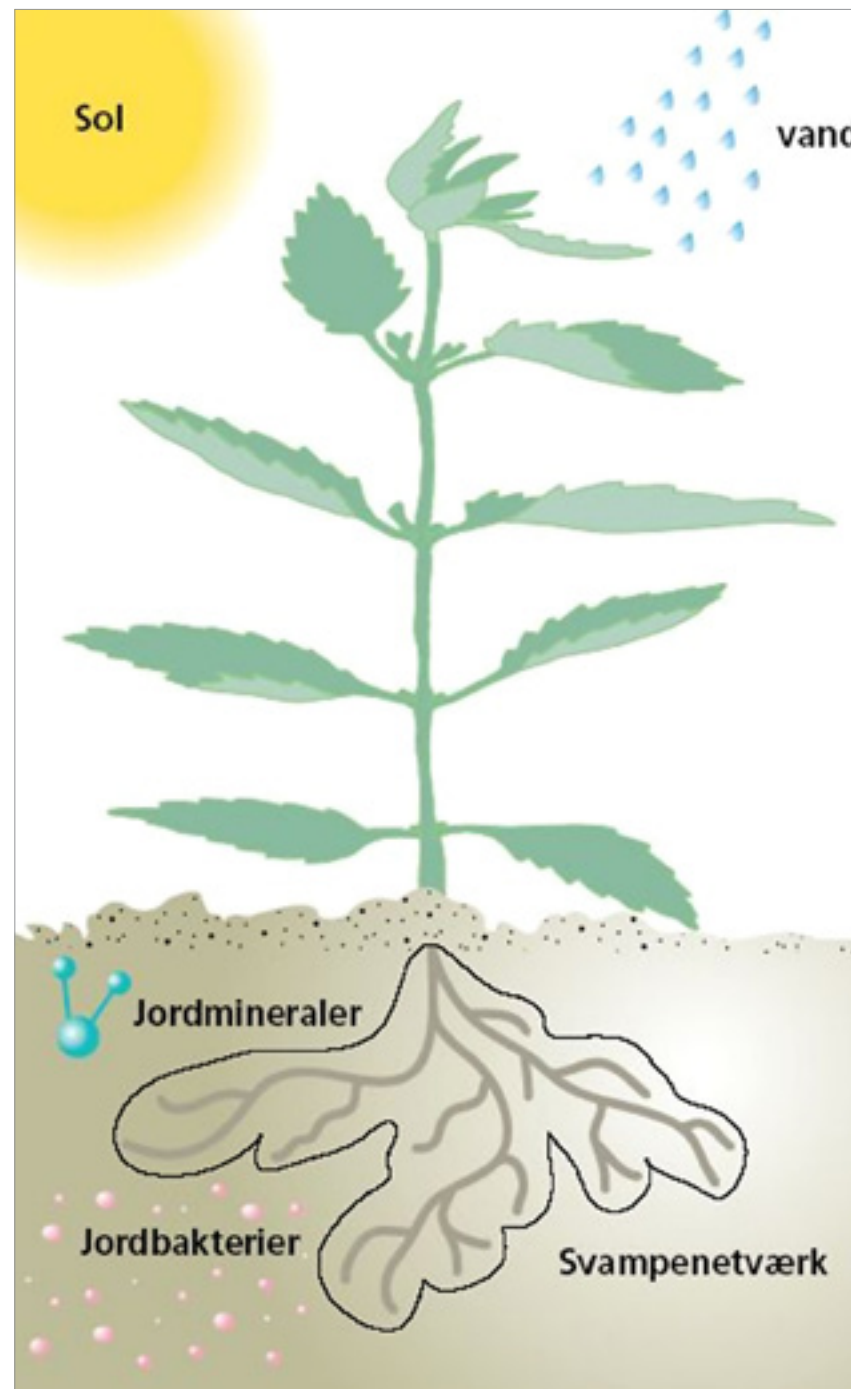
On the next pages, you can read more about types of supplements available and how to take them.

Magnesium supplements

If you have noticed any of the symptoms of magnesium deficiency or if you live a stressful life, which depletes micronutrient reserves, this section will give advice on what kinds of supplements are advisable. However, in my opinion, most people in the Western world could benefit from a daily magnesium supplement, since most of us do not get sufficient amounts through our diet.

In my view, magnesium supplements are best taken in an easily absorbable form, preferably organic or organically bound. Personally, I prefer food state, biofood or whole food supplements where minerals are concerned, since the human body perceives these supplements as food. Consequently, they are absorbed more efficiently than regular supplements and they have rapid effects. Food state supplements are especially beneficial for elderly people whose absorption rates have decreased. If they already have a high medication intake and consequently struggle with too many pills, magnesium oil may be a good solution. An evening foot bath containing magnesium-rich Epsom salt also provides magnesium for the body and may have a very soothing effect on restless legs and tense muscles. It may also promote a good night's sleep.

Magnesium is best taken at bedtime, because it has a calming effect and promotes sleep. It might also be the easiest time for the body to absorb magnesium. Personally, I avoid magnesium in the form of magnesium-hydroxide, -oxide and carbonate, all of which are often found in multivitamins and other dietary supplements. These forms are relatively difficult to absorb and must be taken in larger doses to have any effect. They may also have other negative side effects, since such products may interact with a number of medicinal agents such as beta blockers, statins etc.¹⁵





No calcium without magnesium

25

Many post-menopausal women are recommended to take calcium supplements. Others too may benefit from extra calcium, but in my view no one should take calcium supplements without simultaneously taking the same amount of magnesium.

To maintain the vital and subtle electrical charge in and around our cell membranes, we should always take the same dosage of calcium and magnesium. I am likewise of the clear opinion that inorganic forms of magnesium, such as magnesium –oxide, -hydroxide or carbonate, may disturb the delicate balances of the body and thus do more harm than good. Personally, I avoid such supplements.

If you take calcium supplements, I therefore recommend that you take magnesium as well in a ratio of 1:1. The perfect ratio of calcium to magnesium in the human body is 2:1, i.e. twice as much calcium as magnesium. But considering the lifestyle most people lead today, hitting that exact ratio may be very difficult indeed. The food we eat today generally contains far more calcium than magnesium, often twice or thrice as much. This disparity may be ameliorated by taking supplements in a ratio of 1:1.

Since the calcium intake of Westerners through their food far exceeds their intake of magnesium, usually in the ratio of 3:1, their biochemical balance should be righted by taking equal amounts of calcium and magnesium supplements. A supplement ratio of 1:1 will thus help the body reestablish its equilibrium and its optimum ratio of 2:1.

On the other hand you can easily take supplements of magnesium without taking supplements of calcium. Magnesium supplementation is in my opinion preferable in a readily absorbable form, such as food state, biofood, whole food or other organically bound forms. For example Cytoplan magnesium or magnesium oil (see back for links). Magnesium citrate is also frequently used in dietary supplements. It can also be recommended, just be aware that this form has a lower bioavailability than above mentioned forms, and therefore must be consumed in higher doses.

Basically it is always recommendable to take a high quality multivitamin-mineral supplement together with eventual single supplements. If you take calcium, magnesium, vitamin D3 or other single supplements, intake of a multivitamin-mineral supplement in combination with these, helps the body to maintain the fine balance between the micronutrients.



Magnesium and bone health


Like calcium, magnesium is essential to bone health. It is vital to calcium absorption, to the environment in and around the cells and to cell division. As mentioned above, magnesium also plays a part in the formation of several enzymes including those that activate Vitamin D. Vitamin D is the most immune modulating vitamin in our bodies, and sufficient Vitamin D is not only beneficial to our immune system and hormonal balances but also to our bone health.

The importance of magnesium is often overlooked when it comes to bone health, even though it is important to the body's calcium balance. Two thirds of the magnesium in our bodies are found in the bones. This actually makes magnesium an essential mineral when it comes to building strong bones and preventing osteoporosis and bone loss.

Most people in the Western world are magnesium deficient, and the lack of magnesium in our systems may lead to skewed calcium-magnesium ratios. In such cases, excess calcium may be deposited in our joints, muscles and kidneys causing restlessness or pain. Besides interfering with bone formation, magnesium deficiency may also disturb the subtle electrical charge of the cell membranes, which is maintained in our bodies only by a fine tuned balance between sodium, potassium, calcium and magnesium.

By implementing more magnesium-rich foods in your daily meals, by taking a high quality magnesium supplement at night and by testing yourself regularly for lack of magnesium, you can help your body with many important processes. The symptoms of magnesium deficiency are many, but the most common signs are muscular cramps and restlessness, apathy, memory loss, confusion, cardiac arrhythmias and hypertension.

Magnesium and heart health

A vibrant display of fresh vegetables. In the background, there's a large pile of leafy greens like spinach and arugula. In the middle ground, several whole radishes with their green leafy tops are visible. In the foreground, a white bowl is filled with finely shredded red and white radish. To the right, a small bowl contains green beans.

Coffee, black tea, cola, alcohol, and medication such as diuretics, birth control pills, tetracyclines, or heart medication, deprive your body of magnesium

Magnesium is a very important mineral to our heart health and to our heart rate stability. Sufficient magnesium levels prevent and counteract atherosclerosis¹⁶, hypertension¹⁷, inflammation¹⁸, insulin resistance¹⁹ and cardiac arrhythmia. This provides many good reasons for ensuring sufficient levels of magnesium, particularly if you experience heart problems.

Research shows that the majority of people suffering from cardiovascular diseases have not only low magnesium levels but also low potassium and sodium levels²⁰ – minerals which all contribute to maintaining the subtle electrical charge in and around our cell membranes. That the equilibrium of these minerals remains balanced is vital to this charge, which is responsible for the vital transport of nutrients to and from our cells. The equilibrium is also essential to the environment inside and around the cells. Imbalances will inevitably challenge our inner biochemistry and may eventually result in physical symptoms. Among the first signs of such imbalances are restless legs and muscles along with exhaustion. In such cases, it will often pay off to cut down on calcium and increase magnesium intake to restore the body's biochemical equilibrium. It is also essential to point out that stress may drain your body of minerals including magnesium.

In a series of experiments, heart patients who were given a magnesium supplement at bedtime showed rapid improvements not only in their vascular constitution but also in relation to preventing thrombosis and inflammation²¹.

Magnesium supplements in the form of magnesium -hydroxide, -oxide and carbonate, which are often found in multivitamins and other dietary supplements, may interact negatively with a number of medicinal agents such as beta blockers, statins etc.²²

I would therefore personally recommend easily absorbable magne-

sium supplements such as those from foodstate, biofood, wholefood or other organically bound products. Such products include i.e. Cytoflan magnesium or magnesium oil (see back for useful links). Magnesium citrate is also frequently used in dietary supplements and it's perfectly fine. Just be aware, that this form has a lower absorption rate than the ones mentioned above, however, and should consequently be taken in larger doses.



Inspiration for magnesium rich dishes

On the following pages you will find a bit of inspiration for delicious dishes. The focus is on flavor and lots of magnesium from natural, organic and unprocessed ingredients.

Breakfast

It's a good idea to start the day with a breakfast that includes almonds, walnuts, freshly grounded linseeds as well an apple or a grape fruit for breakfast. Add some protein from either an egg or by adding a little hemp protein powder to your Power smoothie or healthy muesli.

Power smoothie

Can be used as a full nutritious and tasty breakfast or as a healthy meal just after exercise.

Two pers.

1 cup blueberries

1 cup raspberries

1 piece of cucumber peeled

1 avocado

½ banana

A small piece of ginger

A bit of vanilla powder

A bunch of parsley

Freshly squeezed juice of ½ lemon

Rice-, almond- or coconutmilk, yoghurt or water

Blitz or blend all the ingredients thoroughly. You can complement the smoothie with 1-2 tbsp. flaxseed oil, hemp seed oil or Udo's Choice oil and a little hemp seed protein powder. In this way, you'll have a fully



nutritious meal. It is quick to prepare and you can take it with you in the car if you are in a hurry. Remember to blend fruits, berries and vegetables first, then add the oil and protein powder and blend gently for a few seconds. If you choose to add oil, the best is to drink the smoothie immediately.

I recommend that you use organic ingredients, it tastes better, is more nutritious and you then avoid unnecessary chemicals and additives.

Lunch

For your lunch, it can be a good idea with a nutritious salad with walnuts, spinach, broccoli and maybe this tasty hummus. If you would like to enjoy a piece of bread to go with your salad, make sure it's baked by stone-milled, organic wholemeal.

Hummus

250g chickpeas (unsoaked)
 1 tbsp vegetable stock concentrate
 4 garlic cloves
 1 fresh chilli
 Juice of 1 lemon
 3 tbsp tamari
 50ml extra virgin olive oil
 1 tsp unrefined salt and freshly ground pepper

Soak the chickpeas for 24 hours. Bring a pot of fresh water to the boil, add the vegetable stock and the chickpeas and cook for about 40 minutes. Drain the chickpeas, but save the cooking water.

Blitz the chickpeas in a food processor or blender along with the garlic, chilli, lemon juice and tamari. Finally, add the olive oil and adjust the consistency of the hummus with a bit of the cooking water if necessary.

Dinner

For dinner it's important to serve lots of great tasting vegetables of all kinds. This Brussel sprout salad can be highly recommended.

Brussels sprout salad with toasted almonds

16 – 20 Brussels sprouts

50g mixed almonds and cashew nuts

100g fresh spinach

Good-quality extra virgin olive oil

2 tsp sea salt

Tear the leaves off the Brussels sprouts, blanch them for 1 minute in lightly salted boiling water, then drain and cool.

Toast the almonds and cashews lightly in the coconut oil in a frying pan, then chop them.

Rinse the spinach, then toss it with the Brussels sprout leaves, almonds, cashews, lemon zest and juice, olive oil, salt and pepper. Serve right away. This salad is excellent with fish or poultry.

**Links**

[Magnesium](#)

[Calcium](#)

[Food state or wholefood vitamins and minerals](#)

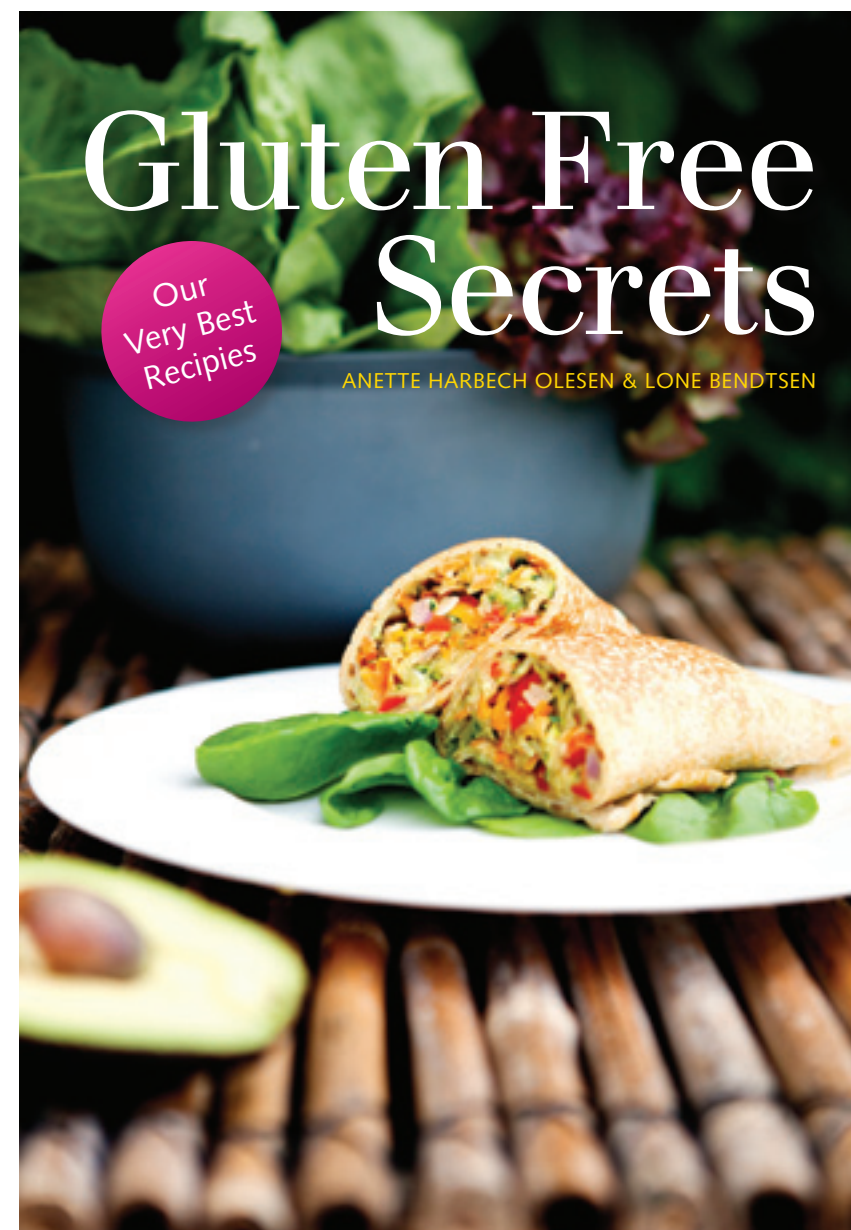
[Organic whole grain flour](#)



References

- 1 Davis D, et al; „Changes in USDA Food Composition Data for 43 Garden Crops 1950 to 1999“; J of Am College Nutr. 2004;23(6):669-682 samt Wester PO, „magnesium“, Am J Clin Nutr 1987; 45; pp 1305-1312 samt Altura B, „Basic Chemistry and physiology of magnesium – a brief review“, Megnes Trace Elem; 1991-2; 10; pp 167-171 samt Shils ME, „Experimental human magnesium depletion“, Medicine 1969;48; pp 61-85
- 2 Wester PO, „magnesium“, Am J Clin Nutr 1987; 45; pp 1305-1312 samt Altura B, „Basic Chemistry and physiology of magnesium – a brief review“, Megnes Trace Elem; 1991-2; 10; pp 167-171 samt Shils ME, „Experimental human magnesium depletion“, Medicine 1969;48; pp 61-85
- 3 Alan R. Gaby; Nutritional Medicine, Fritz Perlberg Publ. 2011
- 4 Alberto Rubio-Tapia et al “The Prevalence of Celiac Disease in the United States” Am J Gastroenterol 2012; 107:1538–1544; published online 31 July 2012.
- 5 Schroeder, HA, „Losses of vitamins and trace minerals resulting from processing and preservaton of food“. Am J Clin Nutr, 1971; 24: pp. 569-573
- 6 Kant, AK, „Consumpton of energy-dense, nutrient-poor foods by adult Americans: nutritional and health implicatons. The third national Health and Nutrition Examinaton Survey; 1988-94. Am. J Clin Nutr. Vol. 72, no.4, pp.929-936, 2000
- 7 Carlo Leifert et al, „Higher antioxidant and lower cadmium concentratons and lower incidence of pesticide residues in organically grown crops: a systematic literature review and meta-analyses“,2014, British J Nutr. 26.06 pp 1-18
- 8 Ibid
- 9 Ibid
- 10 Henrote,JG et al; „Blood and urinary magnesium, zinc, calcium, free fatty acids and catecholamines in type A and type B

- subjects". J Am Coll Nutr. 1985; 4:pp. 165-172 samt Seeling MS, „Consequences of magnesium deficiency on the enhancement of stress reactions; preventive and therapeutic implications (a review) J Am Coll Nutr. 1994; 13:429-446
- 11 Henrote, JG et al; „Blood and urinary magnesium, zinc, calcium, free fatty acids and catecholamines in type A and type B subjects". J Am Coll Nutr. 1985; 4:pp. 165-172
 - 12 Kelsay JL et al, „Nutrient utilization by human subjects consuming fruits and vegetables as sources of fiber" J Agric Food Chem 1981; 29; pp 461-465
 - 13 Van Dokkum et al, „Physiological effect of fiber-rich types of bread- The effect of dietary fiber from bread on the mineral balance of young men"; Br J Nutr 1982; 47; pp 451-460
 - 14 Schroeder, HA, „Losses of vitamins and trace minerals resulting from processing and preservation of food". Am J Clin Nutr, 1971; 24: pp. 569-573
 - 15 Abbot RD et al; „Dietary magnesium intake and the future risk of coronary heart disease (The Honolulu Heart Programme)", Am J Cardiol, 2003; 92:pp 665-669
 - 16 Schechter M et al; „Oral magnesium supplementation inhibits platelet-dependent thrombosis in patients with coronary artery disease"; Am J Cardiol 1999; 84; pp 152-156
 - 17 <http://ajh.oxfordjournals.org/content/6/1/41.short>
 - 18 Alan R. Gaby; Nutritional Medicine, Fritz Perlberg Publ. 2011
 - 19 Ibid
 - 20 Rasmussen HS et al; „Magnesium deficiency in patients with ischemic heart disease with and without myocardial infarction uncovered by an intravenous loading test"; Arch Intern Med 1988; 148: pp 329-332
 - 21 Abbot RD et al; „Dietary magnesium intake and the future risk of coronary heart disease (The Honolulu Heart Programme)", Am J Cardiol, 2003; 92:pp 665-669
 - 22 Ibid



THE IMPORTANCE OF MAGNESIUM

Author: Anette Harbech Olesen

Publishing House Sophia Helse

1. edition - published 2014

Photography: Dott Ovesen, Sara Galbiati and Anette Harbech Olesen

Graphic Design: Finn Brohus www.fbrohus.dk

ISBN 978-87-997537-1-0

www.madforlivet.com