Mineral Deficiency Test

RESULT REPORT

cerascreen®

Your system for life.

Content

1 Your individual result report

Patient:	Max Mustermann	Sample number:	testjun2 / P032719
Date of birth:	12.02.1990	Receipt:	25.07.2016
Weight:	87 kg	Issue:	25.07.2016

Dear Max Mustermann,

As per your request, we measured the concentration of magnesium, selenium and zinc in your blood.

Summary of the results at a glance:

Magnesium

Your value:	**Reference value:***
1,50 mmol/l	1,3 - 1,8 mmol/l

Selenium

Your value:	**Reference value:***
40,00 ug/l	67 – 135 ug/l

Zinc

Your value:	**Reference value:***
12,00 mg/l	4,50 - 9,00 mg/l

This document was created automatically and is valid without signature.

*the reference values stated only refer to adults.

This test cannot and doesn't intend to replace a visit to the doctor.

If you want a personal consultation regarding your test results or have general questions, feel free to contact one of our nutritionists at support@cerascreen.co.uk or 020 36952395.

Your cerascreen® Team

2 Your magnesium test result

The measured value is: 1,50 mmol/l

Your value:	Reference value:	Conclusion:
1,50 mmol/l	**1.30 - 1.80 mmol/l**	**within the normal range**

2.1 Basic information on magnesium

Magnesium is a quantity element i.e. it occurs in relatively large amounts. 60 % of the magnesium is found in the skeleton and 30 % in the muscles. The remaining magnesium is located in the cell segments. The stores in the skeletal area can be mobilized. Magnesium is absorbed throughout the small intestine. Vitamin D, calcium or phosphate normally do not influence the resorption rate if the magnesium supply is sufficient.
Due to its function as a cofactor of approx. 300 enzymes, magnesium is part of nearly all anabolic and catabolic metabolic processes. It induces muscle tension and relaxation.

The daily requirement of magnesium is 300 mg for women and 350 mg for men. Perspiration and drug intake (e.g. diuretics - 'water pills') may cause a loss of magnesium. This sharply increases the requirement.

Magnesium deficiency can lead to diseases of the gastrointestinal tract, especially with longer-lasting utilization disorders, chronic consumption of alcohol or medication. Apart from diuretics, also corticosteroids and oral contraceptives ('the pill') are relevant.

The following table shows the recommended daily intake in mg / day:

Age in years	Women	Men
19 to under 25	310	400
> 25	300	350
pregnant women	310	./.
breastfeeding women	390	./.

2.2 Symptoms of magnesium deficiency

Magnesium deficiency causes various symptoms in correlation with the conductivity of cell membranes:

- gastrointestinal complaints such as nausea and vomiting
- arrhythmia
- from tingling in hands and feet to muscle cramps

A massive deficiency with neuromuscular disorders culminating in muscle spasms (over-stimulation of nerves with cramps and cramping seizures also at rest) does not occur in our latitudes with the Western diet.

An unbalanced diet or chronic diarrhea can cause a deficiency.

2.3 How to compensate a magnesium deficiency

Besides using magnesium supplements, you can adapt your diet accordingly. Foods with a high magnesium content are:

Food	Magnesium content per 100 g edible parts
wheat bran	480
sunflower seeds	420
sesame seeds	347
amaranth	308
quinoa	275
cashew nuts	267
soybeans	220
almonds	170
Brazil nuts	160
pistachios	158

2.4 What makes a good supplement?

- hardly any or few additives for optimal effect
- suitable for many consumer groups: vegan, vegetarian, gluten- and lactose-free
- well-tolerated magnesium compounds with glycine or citrate (magnesium citrate and magnesium bisglycinate)
- presentation in the form of capsules for easy handling and dosage
- high bioavailability = good absorption

3 Your selenium test result

The measured value is: 40,00 ug/l

Your value:	Reference value:	Conclusion:
40,00 ug/l	**67.00 - 135.00 ug/l**	**below the normal range**

3.1 Basic information on selenium

Selenium is an essential trace element which cannot be produced by the body itself. It exists in the form of many different organic components. In combination with further substances, it is responsible for the body's protection system and immune defence. Proteins containing selenium activate the thyroid hormone triiodothyronine (T3) and thereby significantly control the thyroidal turnover. It is assumed that it even has antioxidant properties. Up to now, not all functions of selenium have been clarified. Anti-inflammatory, antirheumatic and antiviral effects of selenium are still under discussion as well as a correlation between selenium supply and bone density.

The daily requirement of women is 60 µg and 70 µg for men.

The following table shows the recommended daily intake in µg / day:

Age in years	Women	Men
19 to under 25	60	70
> 25	60	70
pregnant women	60	./.
breastfeeding women	75	./.

3.2 Symptoms of selenium deficiency

Selenium deficiency

A marked selenium deficiency can best be described by the so-called Keshan disease. It is a heart muscle disease characterized by cardiac enlargement, arrhythmias and heart failure. In addition, degenerative joint diseases and decreased bone growth occur. However, further factors are necessary for the outbreak of this disease.

When artificial foods didn't contain selenium, muscle function disorders occurred. Patients with genetic defect of selenium processing also showed muscle atrophy and impaired immune response. Infertility in men was also reported.

In western industrial nations, lack of selenium due to several diseases more often caused a deficiency than average eating habits (exempt for vegetarians and vegans, as selenium is mostly present in animal foods).

These include chronic inflammatory bowel diseases, cystic fibrosis, short bowel syndrome with decreased selenium processing in the intestine. Renal insufficiency (renal sub-function) and chronic dialysis lead to a higher loss of selenium.

Excess selenium
Too high selenium levels cause the following symptoms:

- diarrhea
- hair loss
- garlic-like breath
- tiredness
- neurological disorders
- impaired growth of fingernails
- nausea

3.3 How to compensate a selenium deficiency

Besides using selenium supplements, you can adapt your diet accordingly. Foods with a high selenium content are:

Food	Selenium content per 100 g edible parts
porcini	187
lobster	130
Brazil nuts	103
crayfish	99
shrimps	50
oysters	25
egg-based pasta	20

4 Your zinc test result

The measured value is: 12,00 mg/l

Your value:	Reference value:	Conclusion:
12,00 mg/l	**4.50 - 9.00 mg/l**	**above the normal range**

4.1 Basic information on zinc

Zinc is an essential and vital trace element and cannot be produced by the body itself. It is part of several important enzymes.

70 % of the body's zinc can be found in skeleton, skin and hair, 28 % in liver, pancreas, testes, prostate, iris and retina. Blood contains the remaining amount of 2 %. A permanent zinc supply must be guaranteed as the body cannot store much zinc.
Zinc is part of the more than 300 metalloenzymes. It influences the immune system, the regulation of the gene expression (due to its participation in DNA) and last but not least the storage and synthesis of insulin.

The following table shows the recommended daily intake in mg / day:

Age in years	Women	Men
19 to under 25	7	10
> 25	7	10
pregnant women	10	./.
breastfeeding women	11	./.

4.2 Symptoms of zinc deficiency

Symptoms of a severe zinc deficiency are:

- loss of appetite
- dermatitis
- diarrhea
- increased susceptibility of infections
- hair loss
- neuropsychological disorders
- reduced sense of taste
- delayed wound healing

Circumstances leading to zinc deficiency are:

- diseases causing utilization disturbances
- artificial feeding
- alcoholism
- treatment with chelating agents in case of intoxications
- large-scale skin burns

A diet rich in calcium can reduce zinc utilization. Further negative influences on the body's zinc levels are infections, stressful situations, parasite infections and surgical interventions.

4.3 How to compensate a zinc deficiency

Besides using zinc supplements, you can adapt your diet accordingly. Foods with a high zinc content are:

Food	Zinc content per 100 g edible parts
oysters	22
wheat germs	18
sunflower seeds	5.7
Edamer cheese	4.9
Emmentaler cheese	4.6
blue cheese	4.1
Gouda cheese	3.9

5 Reference list

Biesalski, H.-K., Grimm, P. (2011). Taschenatlas Ernährung. Stuttgart: Georg Thieme Verlag.
Der kleine Souci, Fachmann, Kraut (2011). Lebensmitteltabelle für die Praxis. Stuttgart: Wissenschaftliche Verlagsgesellschaft.
Deutsche Gesellschaft für Ernährung DGE (2015). Referenzwerte für die Nährstoffzufuhr. Magnesium, Selen, Zink. Bonn: Neuer Umschau Buchverlag.
Kasper, H. (2009). Ernährungsmedizin und Diätetik. München: Urban & Fischer.
Schek, A. (2013). Ernährungslehre kompakt. Sulzbach im Taunus: UMSCHAU ZEITSCHRIFTENVERLAG:
Silbernagl, S. & Despopoulos, A. (2012). Taschenatlas Physiologie. Stuttgart: Georg Thieme Verlag.