

The Free Fitness Tips Newsletter – April 2010

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Hello everyone. I hope you had a good [bank holiday weekend](#). I ended up in Poland for a mini-break and drank rather large amounts of alcohol which did my fitness regime absolutely no good. I'm sure there will be a few others out there who had a similar sort of weekend.

However, as I have discussed in the past the most important thing after weekends such as this is to not dwell on them and to [get back on track](#). So what better way to get back into a healthy routine than with a brand new, slightly belated **Free Fitness Tips Newsletter**?

This month's newsletter includes:

- *Featured Article!*
- *Free Fitness Tips Blog Updates!*
- *Final Words!*

1) Featured Article

After covering the [macronutrients](#) individually in [March](#), I did a summary article on the topic and started to focus on specific areas during [April](#). My personal favourite of the articles published this month was...

The 7 Macrominerals Explained



In my last few articles I have been discussing each of the [macrominerals](#) in detail. Today I am

going to bring this information together and provide a summary of the seven macrominerals, the ways they benefit your health, the best food sources and the adverse effects of getting too little or too much.

CALCIUM



Discovery:- Calcium was discovered by Sir Humphry Davy in 1808.

Storage:- Calcium represents approximately 1.5% of an average adult's bodyweight. Around 99% is stored in the bones and teeth. The rest is stored in the blood and cellular fluids.

Functions:- The main function of calcium is to support strong bones and teeth. It is also responsible for controlling blood pressure, muscle contractions and nerve transmissions, helping the blood to clot and supporting proper muscle and nerve functions.

Recommended Daily Allowance (RDA):- Your body absorbs less calcium as you get older. This means that your requirement increases as you age. For very young children aged between 0-6 months the RDA is 210mg. However, for people aged 51 years and over the RDA is a much higher 1200mg.

Food Sources:- Dairy products are a well publicised source of calcium but there are many more. The list below contains five of the top calcium food sources:

- Almonds = 266mg per 100g serving.
- Cheese = 721mg per 100g serving.
- Milk = 114mg per 100ml serving.
- Spinach = 136mg per 100g serving.
- Yoghurt = 200 mg per 100g serving.

Overdose Symptoms:- Eating excessive levels of calcium (3000mg per day or more) can lead to a number of negative symptoms including dehydration, diarrhea, lethargy, nausea, stomach pain and vomiting.

Deficiency Symptoms:- Failing to get the RDA of calcium can cause [high blood pressure](#), muscle cramp and osteoporosis (reduced bone density).

CHLORIDE

Discovery:- Chloride was isolated by Sir Humphry Davy in 1807 after Carl Wilhelm Scheele initially discovered it as the compound dephlogisticated marine acid (a combination of chloride and oxygen).

Storage:- Chloride represents around 0.15% of an average adult's bodyweight and is stored in the fluids outside the body's cells.

Functions:- Chloride has various functions in the body. It assists in the production of glandular hormones, helps you absorb potassium and helps maintain proper blood pressure and volume. On top of this chloride plays a key role in digestion and [metabolism](#), helps remove waste carbon dioxide from the body and maintains a proper fluid balance inside and outside the cells.



RDA:- Our need for chloride increases as we age. Very young children need 180mg per day whilst fully grown adults require 750mg per day.

Food Sources:- Chloride can be found in a variety of foods which include:

- Butter = 1300mg per 100g.
- Cheddar Cheese = 1060mg per 100g.
- Olives = 300mg per 100g.
- Table Salt = 59900mg per 100g.
- [Wholemeal Bread](#) = 860mg per 100g.

Overdose Symptoms:- Presently there is no upper limit on chloride consumption. However, some people have experienced breathing difficulties, fluid retention and high blood pressure when eating extremely high levels of this nutrient.

Deficiency Symptoms:- Chloride deficiency can be caused by poor dietary choices, certain medications, diarrhea, vomiting and surgical procedures. If you do become deficient it can lead to muscle spasms and weakness.

MAGNESIUM



Discovery:- Henry Wicker is credited with the initial discovery of magnesium in the form of 'Epsom Salts' in 1618. Following this discovery, Joseph Black recognised that 'Epsom Salts' contained the element magnesium in 1755. Sir Humphry Davy made the final breakthrough and isolated magnesium in 1808.

Storage:- Magnesium represents approximately 0.05% of an average adult's bodyweight. Around 60% is stored in the bones and teeth with the other 40% stored in the muscles and soft tissues.

Functions:- Magnesium is responsible for over 300 biomechanical reactions in the body. It assists in the metabolism of all the [macronutrients](#) and some of the micronutrients. It also helps the muscles and nerves relax, promotes good blood circulation and supports healthy bone growth. Magnesium has also been linked with protection from certain diseases including [diabetes](#) and heart disease.

RDA:- The RDA for magnesium increases as we get older. Children aged 0-6 months need 30mg per day. However, the daily requirement for adults aged 31 years and over increases to 420mg for men, 320mg for women and 360mg for pregnant women.

Food Sources:- Magnesium can be found in various foods including:

- Almonds = 279mg per 100g.
- Black Beans = 70mg per 100g.
- Brazil Nuts = 229mg per 100g.
- [Pumpkin Seeds](#) = 539mg per 100g.
- Spinach = 87mg per 100g.

Overdose Symptoms:- It is almost impossible to overdose on magnesium through diet alone. However, if supplementary doses of 1000mg per day or over are taken it can lead to a number of negative symptoms such as diarrhea, fatigue, stomach cramps and vomiting.

Deficiency Symptoms:- Magnesium deficiency is generally caused by failing to eat enough of this nutrient although it can be caused by other factors including alcohol abuse, disease and illness. The symptoms of deficiency often vary between individuals but can include muscle cramps, nausea, numbness, poor appetite, rapid heartbeats and vomiting.

PHOSPHORUS

Discovery:- Phosphorus was discovered accidentally by German alchemist Henning Brand in 1669 during an experiment where he tried to convert metals into gold.

Storage:- Phosphorus represents around 1% of an average adult's bodyweight. Approximately 85% of this is stored in the bones and teeth (as calcium phosphate) with the remaining 15% stored in the cells and bodily fluids.



Functions:- The main function of phosphorus is to work with calcium and support the growth of strong, healthy bones and teeth. On top of this it also helps activate the [B-complex vitamins](#), assists in the construction of healthy cell membranes, helps create deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) and supports proper kidney function.

RDA:- Our phosphorus requirements fluctuate throughout our lifetime. Children aged 0-6 months need just 100mg per day but this increases to a much larger 1250mg per day for children aged 9-18 years. Adults aged 19 years and over need to consume 700mg of magnesium per day.

Food Sources:- The best sources of phosphorus are [high protein foods](#) with some of the best choices being:

- Beef Fillet Steak = 265mg per 100g.
- Brazil Nuts = 590mg per 100g.
- Cheddar Cheese = 520mg per 100g.
- Chicken = 190mg per 100g.
- Milk = 100mg per 100g.

Overdose Symptoms:- Having too much phosphorus in the body is extremely rare and normally only occurs as the result of certain types of kidney disease. When phosphorus levels in the body do become too high it can lead to calcium being deposited on the soft tissues (which causes them to harden) and reduced absorption of the other macrominerals.

Deficiency Symptoms:- Being deficient in phosphorus is just as rare as overdosing. When deficiencies do occur they are generally caused by alcoholism and certain diseases that inhibit your ability to absorb this nutrient. The symptoms of phosphorus deficiency include anemia (a low red blood cell count), confusion, increased risk of infection, osteomalacia (softening of the bones) and weakness.

POTASSIUM



Discovery:- Potassium was successfully isolated by Sir Humphry Davy in 1807.

Storage:- Potassium represents approximately 0.35% of the bodyweight in an average adult with the vast majority being stored within the body's cells.

Functions:- Potassium has many roles in the body which include helping your body break down [carbohydrates](#) and [protein](#), promoting muscle growth, regulating blood pressure and supporting

nerve transmissions.

RDA:- The RDA for potassium increases as we age. Children aged 0-6 months need just 400mg per day whilst adults aged 19 years and over need a much larger 4.7g per day.

Food Sources:- Fruits and vegetables are often the best source of potassium. The list below contains some of the best food sources:

- Bananas = 350mg per 100g.
- Dried Apricots = 1880mg per 100g.
- Fillet Steak = 470mg per 100g.
- Scallops = 580mg per 100g.
- Spinach = 490mg per 100g.

Overdose Symptoms:- Your body regulates blood levels of potassium very tightly meaning it is extremely difficult to overdose on this nutrient. However, kidney disease and other infections can interfere with this process and contribute to a potassium overdose. This can lead to diarrhea, nausea, stomach pain and ulcers.

Deficiency Symptoms:- Dietary deficiencies of potassium are also extremely rare. However, excessive fluid loss, consuming high levels of sodium and digestive problems can all interfere with potassium absorption and lead to low levels in the body. The symptoms of potassium deficiency include confusion, dry skin, muscle cramps and thirst.

SODIUM

Discovery:- Sir Humphry Davy successfully isolated sodium in 1807.

Storage:- Sodium represents around 0.15% of an average person's bodyweight most of which is stored in the blood and fluids that surround the body's cells.

Functions:- Sodium has multiple roles in the body which include helping your body break down carbohydrates and protein, keeping minerals soluble in the blood, keeping your joints flexible, maintaining blood volume, supporting the major organs, supporting muscle contractions and supporting nerve transmissions.

RDA:- The UK RDA for sodium is 1600mg for healthy men and women but this drops to 1500mg for people suffering from high blood pressure.

Food Sources:- Table salt is by far the richest dietary source of sodium but other foods also contain high levels. Five of the best food choices include:

- Cheddar Cheese = 610mg per 100g.
- Olives = 1800mg per 100g.
- Prawns = 1590mg per 100g.
- Salted Butter = 840mg per 100g.
- Table Salt = 38850mg per 100g.

Overdose Symptoms:- A large majority of people eat much more than the recommended 1600mg of sodium per day because their diets contain high levels of processed foods. Eating too much sodium can lead to fluid retention, high blood pressure, heart disease, kidney disease and swelling in the hands and legs.

Deficiency Symptoms:- Since most modern diets contain more than enough sodium deficiencies are very rare. When people do become deficient it is often due to sodium being removed from the body (through diarrhea, sweating and vomiting) or sodium absorption becoming inhibited (as the result of certain diseases and medication). Sodium deficiencies can lead to confusion, headaches, lethargy and nausea.



SULPHUR



Discovery:- Sulphur was officially recognised as an element in 1777 by the French chemist Antoine Lavoisier.

Storage:- Sulphur represents approximately 0.25% of an average adult's bodyweight. The hair, nails and skin contain particularly high levels of sulphur but it can be found in all the body's cell and tissues.

Functions:- The main role of sulphur is to treat joint and skin conditions. It also helps your body

ingest carbohydrates, [dietary fats](#) and certain B-complex vitamins. On top of this sulphur assists in the production of collagen (your body's main connective tissue), insulin (a hormone that helps control [blood glucose levels](#)) and keratin (a protein that promotes healthy hair, nails and skin).

RDA:- There is no official RDA for sulphur although most sources agree that an intake of between 800mg and 100mg is adequate.

Food Sources:- High protein foods are often the best food choice when it comes to sulphur but certain vegetables also contain high levels. Five of the richest food sources are:

- Brazil Nuts = 290mg per 100g.
- Cheddar Cheese = 230mg per 100g.
- Chicken = 300mg per 100g.
- Egg = 180mg per 100g.
- Spinach = 90mg per 100g.

Overdose Symptoms:- At present there is no recommended upper limit on sulphur consumption and no reported side effects associated with consuming high levels of this nutrient.

Deficiency Symptoms:- Sulphur deficiencies are extremely rare and normally only affect people who follow a low protein diet. The symptoms of not getting enough sulphur include arthritis, circulatory problems, inflammation, nerve disorders and skin problems.

SUMMARY

The macrominerals are vital for good health and all help your body function in different ways. Whilst they are required in much smaller amounts than the macronutrients you still need to ensure that you get the RDA of each one. So if your diet is lacking in any of the seven make the necessary adjustments and add some new foods to your diet.

2) Free Fitness Tips Blog Updates

This month I published 5 new blog posts. The full list is below:

- [Sulphur Explained](#) - April 4th 2010
- [Stationary Bikes: The Best Bikes for Loosing Weight](#) - April 9th 2010 (guest post from Scott Gray)
- [The 7 Macrominerals Explained](#) - April 17th 2010 (this month's featured article)
- [12 Top Macromineral Benefits](#) - April 22nd 2010
- [12 Reasons To Avoid Macromineral Overdose](#) - April 30th 2010

3) Final Words

Well that's it for another month. The time seems to be flying by. The number of posts published has been a bit lower this month but the level of detail has increased. Hopefully, next month I can increase the number of posts published whilst maintaining the same level of detail.

Next months posts will continue to focus on the [micronutrients](#) in greater depth as I attempt to give this topic a full write up.

Until next time,

Tom Parker (Owner and Creator of Free Fitness Tips)