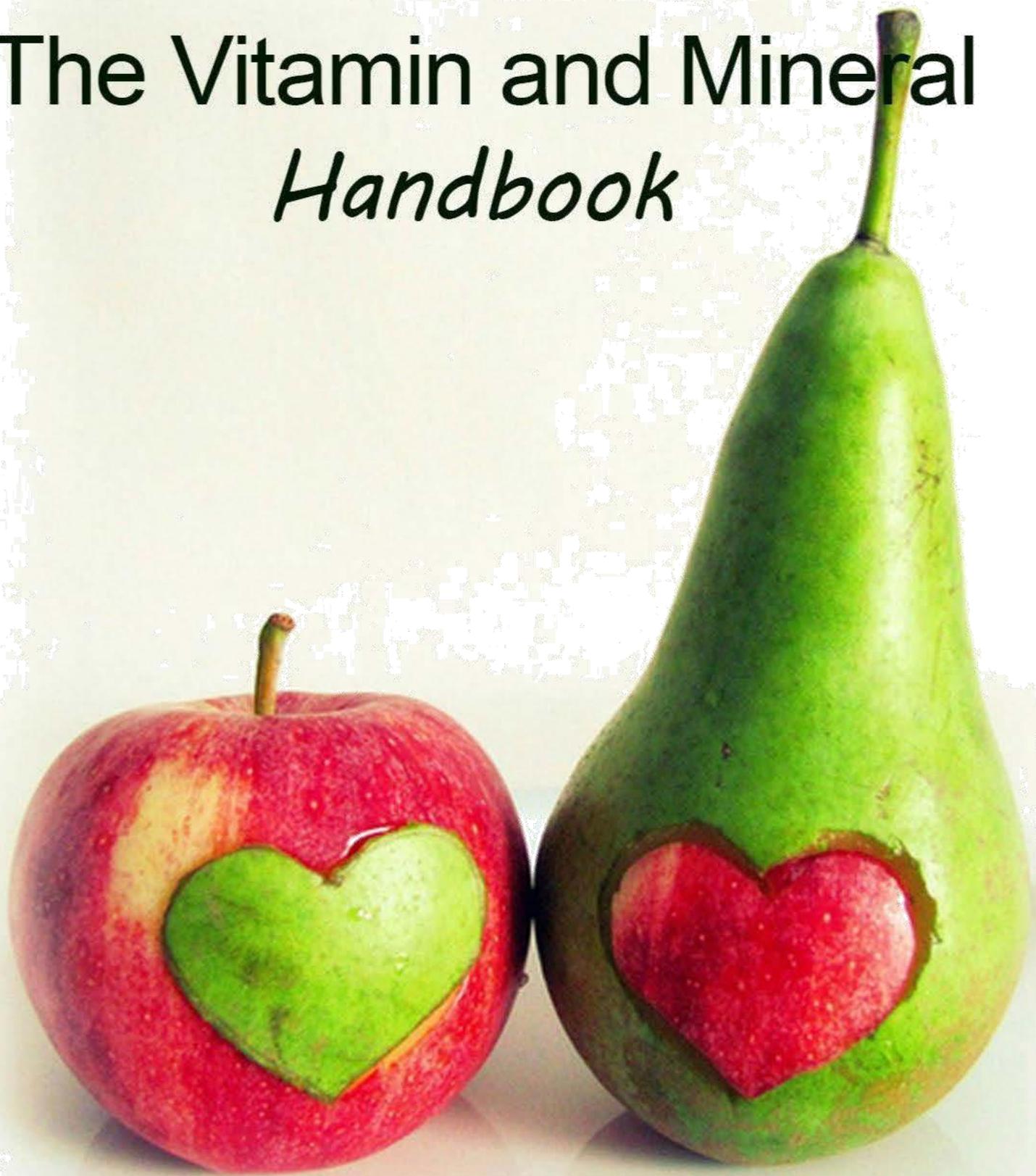


The Vitamin and Mineral *Handbook*



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An Overview of Vitamins



Where does the word “vitamin” come from?

The word is derived from the Latin word “vita” (life) and the biochemical term “amine”, meaning “containing nitrogen”, because they were originally thought to be amines and because there is a dire need for us to consume vitamins during our lifetime, in small amounts.

What are vitamins?

A vitamin is an organic (carbon-containing) substance derived from plants and animals that the human body must use in small amounts.

Without vitamins, the human body would not survive, as vitamins are required for normal growth, metabolism (creating energy in your cells) and overall health. Vitamins are needed to make enzymes and hormones, which are important substances that the human body uses to produce all the chemical reactions needed to sustain life.

Your body has no way to create vitamin molecules itself, so the vitamin molecules must come in through food that you eat. Most of us get enough of vitamins from our food, but it may be necessary for some people to take a vitamin supplement, because an ongoing shortage of vitamins will lead to failed health, weakness, susceptibility to disease.

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Choosing food over packed supplements is often the best choice. Food contains the nutrients your body needs in their very purest form, and interact with each other and your body in a way supplements cannot. The body needs at least 13 different vitamins to function properly:

- Vitamin A – Retinol;
- Vitamin B complex (B1 – Thiamine; B2 – Riboflavin; B3 – Niacin; B6 – Pyridoxine; B12 – Cyanocobalamin; B9 – Folic acid; B5 – Pantothenic acid; H – Biotin);
- Vitamin C – Ascorbic acid;
- Vitamin D – Calciferol (can be obtained through sunlight);
- Vitamin E – Tocopherol;
- Vitamin K – Menaquinone.

Vitamins are divided into two main groups: *water-soluble* or *fat-soluble*.

Vitamins A, E, D and K are fat-soluble; they dissolve in fat, but not water. Once these vitamins are absorbed by the body, they are stored mostly in the fatty tissues and the liver, for up to six months. The liver provides the primary storage tissue for the A and D vitamins. Primarily, our body fat stores Vitamin E, but reproductive organs also store this vitamin, however to a lesser extent. Relatively little vitamin K is stored. Whenever you need any of these vitamins, your body takes them out of your internal storage and uses them.

Because you can store these vitamins, you do not have to get a supply of them every day. However, eating fats or oils that are not digested can cause shortages of fat- soluble vitamins. On the other hand, getting too much of these vitamins, particularly vitamins A and D, can lead to toxic levels in the body and cause problems.

The water-soluble vitamins – vitamin C and all Vitamin Bs – need to dissolve in water before your body can absorb them. Because of this, your body cannot store these vitamins in any significant amounts. The water-soluble vitamins your body does not use are removed by your kidneys and eliminated through urine, so you need a fresh supply of these vitamins every day. You cannot really overdose on water-soluble vitamins unless you take truly massive doses.

Usually, water-soluble vitamins are easily destroyed or washed out during food storage or preparation. Nevertheless, proper storage and preparation can minimize vitamin loss. To prevent that from happening, refrigerate fresh produce, keep milk and grains away from strong light and use the cooking water from vegetables to prepare soups.

In a perfect world, children would not balk at eating a perfectly balanced diet and adults would have the time to create that perfect menu for themselves and their children. Unfortunately, we live in the real world, in which perfection does not exist. So what about those vitamins we need? The alternative to a perfect diet is a regular regimen of vitamin supplements.

Before you grab up the latest, most expensive or cheapest vitamins you can find, take a minute to evaluate what it is that you expect to accomplish. Start by carefully evaluating your typical daily food intake.

Even if you are eating a lot of fruits and vegetables, you might not be getting all that you need. Nowadays, our fruits and vegetables are poor in these nutrients. It's time to add a vitamin supplement, but you should be smart about it. For most children and adults who are not getting the recommended daily allowances of vitamins, a general vitamin supplementation is probably your best bet. There are plenty of options out there and it becomes a matter of personal choice.

There's no doubt that having sufficient vitamin intake on a daily basis will make you feel better, but there's also no doubt that vitamins aren't going to turn back the clock, give you the vitality of a toddler and make all your aches and pains go away. Be smart about it. Read the back of the bottle to find out what vitamins are actually packed into that little pill. You may be surprised to find the ingredients of the cheapest store brand and those incredibly expensive vitamins are exactly the same.

It is essential that a person is aware of what constitutes good food health vitamin intake. The federal drug administration produces a recommended daily allowance for the majority of vitamins which it regards as a good food health vitamin intake. These figures vary according to a person's age, sex and some other factors so that the good food health vitamin intake for a young woman is going to be different to that of a man in his seventies.



The food health vitamin intake amounts of certain foods are included in the nutritional labeling. This labeling is important for a person to consider and helps ensure that they are receiving the correct food health vitamin intake from the foods that they eat. The nutritional information is often represented as a percentage of the recommended daily allowance of each vitamin and mineral and can help assess the value of the foods in the quest for good food health vitamin intake.

There are also a number of items that a person may want to restrict in their diet as part of their good food health vitamin intake. Again, the nutritional labeling of certain foods can help a person to see how high a product is in these undesirable contents. Salt and fat, for example, may be items that a person wants to consider limiting as part of their good food health vitamin intake even though they are not strictly vitamins.

The majority of people actually refer to nutrients when they use the word *vitamin* and food manufacturers are aware that a person is looking at minerals and other items when they are considering their good food health vitamin intake. Fiber is another element that many people are more aware of as forming an essential part of a balanced diet and is necessary for good food health vitamin intake.



If a person is on a restricted diet for any reason, then they need to pay even more attention to their vitamin intake. Obviously, some foods contain different nutrients than others and this applies to vitamins as well and it may be more difficult for a person to achieve their vitamin intake if they are unable to eat certain foods.

Vitamin supplements can form an essential part of a good food health vitamin intake for people who are unable to obtain their vitamins from their normal diet. It is also worth remembering that the vitamin intake from good food sources for a person varies throughout their life depending on their general health.

Some categories of people may require different vitamins than others. For example, vegetarians are often deficient in certain vitamins that are only found in animal products, and a vitamin supplement is the ideal solution to this problem.

Vegetarians do need to be aware that some vitamin supplement manufacturing processes involve animal products and it is important for them to read the labels. A large number of synthetic vitamin supplement products are available which will enable a vegetarian to take them without overlapping their dietary beliefs or needs.



Children will often need a vitamin supplement, especially when they are extremely young. This is because a lot of children do not eat a sufficient variety of foods in their early years and a vitamin supplement can help compensate for this natural deficiency.

Breast feeding has long been recommended as a source of all the essential nutrients but women who choose to bottle feed may be concerned as to whether their baby needs a vitamin supplement. The large majority of baby milk formulas contain additional vitamins to prevent the need for a vitamin supplement to be given. It is important to discuss any concerns over the need for a baby or child to take a vitamin supplement with a health professional to ensure that the correct solution is found.

Seniors or those suffering from certain diseases or illnesses are other groups of people that may need to take a vitamin supplement. The body may often ask for a vitamin supplement to compensate for a person not being able to consume the recommended daily allowance of certain vitamins through their normal diet.



There are also a number of other factors that deplete our bodies of important vitamins:

- Smoking – each cigarette smoked eliminates 25mg of vitamin C.
- Stress –When stressed, our bodies consume the stored B-complex vitamins and minerals at a much higher rate than usual.
- Refined sugar and other products – we eliminate chromium, zinc, vitamin B3 and other minerals from our bodies.

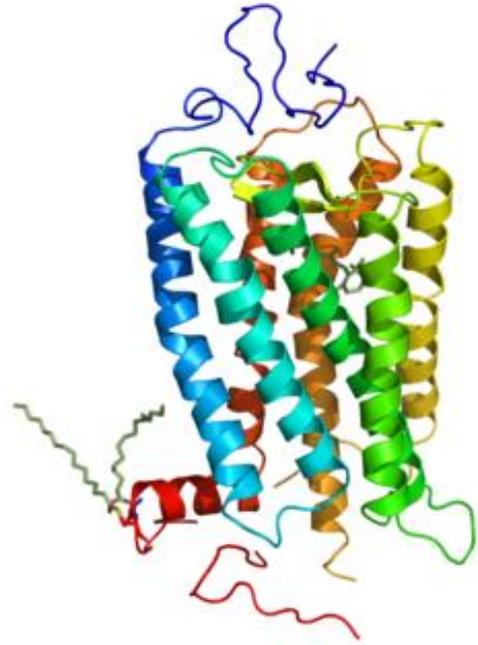
Vitamin A

In 1912, a Polish biochemist by the name of Casimir Funk discovered Vitamin A, also referred to as retinol. Vitamin A can usually be found in vegetables (i.e., spinach, carrots), fruits (oranges and any other yellow fruits) and fats.

Vitamin A is a fat-soluble vitamin that has many functions in the body. It helps the eyes adjust to light changes, plays an important role in bone growth, tooth development, reproduction, cell division and gene expression. Also, the skin, eyes and mucous membranes of the mouth, nose, throat and lungs depend on vitamin A to remain moist. To prevent antiaging, as well as cancer, vitamin A is one of your best weapons, as it is a great antioxidant. Among the A vitamin benefits is that it boosts your immune system, which will enable your body to fight against different viruses and illnesses.



In order to maintain your healthy skin and excellent vision for longer periods of time, your body requires vitamin A on a daily basis. This is because it contains the rhodopsin, which is a protein that absorbs light in the retina. Deficiency in this vitamin is the leading cause of preventable blindness in children. Some even admit that carrots provide enough vitamin A to improve your night vision. Moreover, the ancient Egyptians ate liver to combat night blindness. To properly absorb the A vitamin, you will need to consume proteins and fat. Proteins pair up with vitamin A, which helps it move through your body.



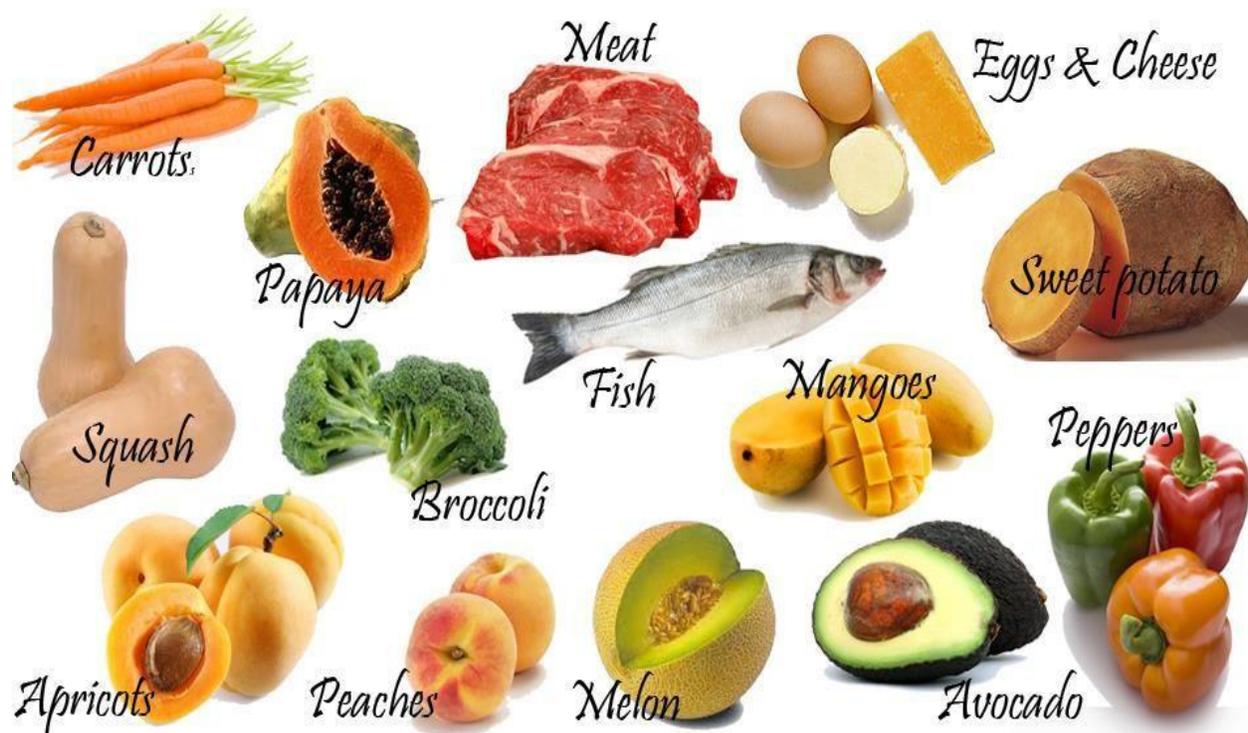
On a normal day, you should consume around 5,000 international units (IU) of vitamin A, but it depends on your health and your age. The safest form of vitamin A is beta carotene as mentioned above, and it can be taken in much larger doses. No matter your age, feel free to consume high amounts of vitamin A in the form of beta carotene.

Vitamin A comes in two forms in the human diet. You either get it as pre-formed vitamin A, such as retinol, retinal and retinyl esters, or pro-vitamin A carotenoids, such as beta, alpha, and gamma carotenes. The latter category also includes beta-cryptoxanthin.

If you do not include enough vitamin A in your diet, you will end up with a vitamin A deficiency.

Signs of vitamin A deficiency are night blindness, dry scaly skin, low resistance to infection, poor tooth formation, slower bone growth, formation of gall and kidney stones, sinus troubles, poor digestion, ear abscesses. A prolonged deficiency in vitamin A can lead to cancer, as well.

On the other hand, too much vitamin A can cause pain in your joints, abdomen, and even your bones. Even though too much or not enough can cause you serious side effects, you should always get the right amount in your diet. Vitamin A is very important, and should always be included in your diet. You can find it in many foods, or take supplements that include it. If you are going to take supplements, you should make sure that they provide the right amounts - with no side effects.



An excessive intake depletes vitamin A found in our internal storage. Other sources of Vitamin A include: liver, butter, whole milk, cheese, egg yolk, carrots, leafy green vegetables, sweet potatoes, pumpkins, winter squash, apricots and cantaloupes.

The Guide to Vitamin B Complex

Although many vitamins help the body reach and maintain optimal health, one of the most beneficial nutrients is the B complex. The B complex includes the following vitamins:

- B1 or Thiamine,
- B2, or Riboflavin,
- B3 or Niacin,
- B5 or Panthothenic Acid,
- B6, which is Pyridoxine,
- B7 or Biotin,
- B9, also known as folic acid,
- B12 or Cobalamin (or Cyanocobalamin),
- PABA (4-Aminobenzoic acid or para-aminobenzoic acid),
- Inositol,
- Choline.



Due to the rich nutrients that come from vitamin B complex, every cell of the body, especially the nerve cells receive benefit. Unfortunately, a deficiency in B vitamins can cause muscle weakness and edema. Although a number of people live with a vitamin deficiency, the worst are folic acids, which are needed to help improve mood while fighting neural tube defects in unborn children, which is why vitamin B complex is so important for pregnant women. In addition, deficiency of vitamins B6 or B12 leads to depression and fatigue.

Keep in mind that with B vitamins are not well stored in the body. Then, if you consume caffeine or alcohol, these vitamins tend to become depleted quickly. However, there are other important benefits found in B vitamins such as healthy skin, strong, shiny hair, stronger muscle and bones, and healthy mucosal membranes, especially those found around the mouth. Vitamin B complex also improves intestinal health and bowel function, boosts mood, decreases irritability, helps with insomnia, promotes better sleep, improves liver and brain cell function, and can reduce PMS symptoms.

Although vitamin B complex is found in foods we eat, most are lost during the cooking process. Therefore, if you want to get those most out of your vitamins, we recommend you take a supplement of 50 mg in B1, B2, B3, B5, B6, B7, B12, Choline, PABA, and Inositol. In addition, adding 400 mcg of folic acid (B9) would be highly beneficial to your overall health and wellness. Remember, your body needs the right type of vitamins so you can function optimally, as well as live a long life. By eating a well-balanced diet rich in vitamins and supplements, you will feel better.

Every part of the B complex vitamin performs its own individual function within the body but it is when they work together as Vitamin B complex that they provide essential maintenance for the body to remain healthy. The B complex vitamins are water soluble and it is essential that enough of these vitamins are consumed on a daily basis. The body cannot store water soluble vitamins such as the B complex vitamin and this leads to a regular intake being required.

The B complex vitamins are extremely beneficial for a number of conditions and may be needed in additional quantities at certain times in a person's life. Of course, there is a recommended daily allowance for the B complex vitamins that varies according to the sex and age of a person. However, doctors and other health professionals have discovered the benefits of increasing the intake of the B complex vitamin to help overcome certain illnesses.

Many people suffer from anxiety and stress at one time or another and research has found that the B complex vitamin can be beneficial in helping alleviate the symptoms of anxiety and stress. If a person has been sick the B complex



vitamin can be extremely valuable in aiding the recovery process. Fatigue can be a symptom of a multitude of illnesses as well as simply overdoing things, but the B complex vitamin can help alleviate general tiredness and lethargy.

Interestingly, some skin conditions, such as dermatitis, can also benefit from additional B complex vitamin intake. In fact, a number of creams and other skin preparations contain added vitamin B complex that can be absorbed by the skin to alleviate the condition. The condition of a person's hair will also be greatly improved with sufficient B complex vitamin intake.

The Different Types of B Vitamins

All of Vitamin Bs are essential for a number of different processes that occur in our bodies. Vitamin B deficiency causes many disorders. Our main organs (i.e., brain, heart, etc) need vitamin B to function properly. In fact, just about every organ and process within the body requires at least one form of Vitamin B.

Thiamin, or the B1 vitamin helps every cell and nerve inside the body to function properly. It prevents the alteration of our mental health, and it is particularly useful for our memory. The same as other B vitamins, the body uses the thiamin to transform food into energy.



Thiamine is an essential vitamin that cannot be synthesized in our bodies, and must come from our diets. It is essential for normal development, growth, and reproduction since its involved in a wide array of biochemical reactions – including and especially ones that convert fats, carbohydrates and proteins energy. Vitamin B1 is water soluble,. Which means you easily eliminate it through urine, therefore, requiring a continuous daily food intake supply?

The B1 vitamin can be found in whole bread and grains, pork, green peas, edamame, eggs, beans, different seeds, nut and milk. A deficiency in thiamin will cause a lack of energy.

The recommended daily allowance of B1 is as it follows:

persons	USA (mg)	Canada (mg)
0-3 years	0.3-0.7	0.3-0.6
4-6 years	0.9	0.7
7-10 years	1	0.8-1
> 10 years males	1.2-1.5	0.8-1.3
> 10 years females	1-1.1	0.8-0.9
Pregnant females	1.5	0.9-1
Breast-feeding females	1.6	1-1.2

Thiamin can also be used to treat epilepsy (50mg daily), Alzheimer’s disease (3mg each day, for longer periods) and even hypothermia (100mg of B1 administered intravenously).

Riboflavin, also known as B2 is particularly useful for the body as it helps it develop and grow red blood cells. B2 also aids convert the food into energy. Deficiency of B2 can cause anemia, Parkinson’s disease and ulcer, among others.



The following table will give you necessary info on the recommended daily allowance:

Life Stage	Age	Males (mg/day)	Females (mg/day)
Infants	0-6 months	0.3	0.3
Infants	7-12 months	0.4	0.4
Children	1-3 years	0.5	0.5
Children	4-8 years	0.6	0.6
Children	9-13 years	0.9	0.9
Adolescents	14-18 years	1.3	1.0
Adults	19-years and older	1.3	1.1
Pregnancy	all ages	-	1.4
Breastfeeding	all ages	-	1.6

Vitamin B2 is a key component of the coenzyme Flavin Adenine dinucleotide (FAD), therefore, supporting the body's own antioxidant functions through glutathione.

Vitamin B2 is involved in the utilization of other B-vitamins including vitamin B6, niacin, and folate, so deficiency in vitamin B2 may affect many enzymes in the body.

Although it is easily found in grains, B2 is easily lost during milling, heating, and storage of these foods. Many plant and animal-derived foods contain at least small quantities of vitamin B2. Some food sources of vitamin B2 include fortified wheat cereal and bread, milk, cheddar cheese, eggs, almonds, salmon, chicken, and beef.

Niacin or B3 is one of the most used B vitamins, included in more than 50 processes, involving detoxifying, hormonal and producing energy processes. It can be found in the following fruits and vegetables: poultry, tuna, salmon, beef, and legumes – such as lentils and lima beans.



There are over 400 enzymes in the body which require niacin coenzymes in order to work properly. B3 functions most often in energy metabolism, converting fats, carbohydrates, and protein to energy. It also works in synthesizing fatty acids and cholesterol in the body.

People who are deficient in the B3 vitamin suffer from stomach disorders, fatigue, experience appetite loss, stress, anxiety and depression. To avoid all these diseases, follow the RDA instructions enclosed in the following table:

Age	Male	Female	Pregnant	Lactating
0-6 months	2 mg*	2mg*		
7-12 months	4 mg*	4 mg*		
1-3 years	6 mg	6 mg		
4-8 years	8 mg	8 mg		
9-13 years	12 mg	12 mg		
14-18 years	16 mg	14 mg	18 mg	17 mg
19-50 years	16 mg	14 mg	18 mg	17 mg
51-70 years	16 mg	14 mg		
70+ years	16 mg	14 mg		

Pantothenic acid, commonly referred to B5, works alongside other B vitamins (B1, B2, B3, B6) to convert carbohydrates, fats, but also proteins into energy. It also supports the production of Vitamin D, red blood cells and hormones. Moreover, it helps reduce stress. Its name comes from the Greek word “pantos”, meaning everywhere.



The B5 vitamin can be found in all foods and is considered to be one of the most productive B vitamins. One could hardly run the risk of being affected by a B5 deficiency. Therefore, the doctors suggest that there is no need to follow a RDA as far as B5 consumption is concerned.

However, since it is water-soluble, the body gets easily depleted of it if you neglect your diet and rely solely on fast-food. B5 is a component of coenzyme A (CoA) which is required for creating energy from food macronutrients, such as fats, carbohydrates, and proteins. CoA is also essential in synthesizing the neurotransmitter acetylcholine.

The foods rich in B5 are organ meats, salmon, eggs, beans, milk, and whole grains. However, grains (implicitly, processed baked foods) lose their B5 properties when they are grounded into flour.

Pyridoxine, also known as B6, helps redistribute the amino acids for the purpose of creating more than 5,000 proteins that the body needs for the production of different enzymes. It's essential to over 100 enzymatic steps in the body.

Food	Cals	%Daily Value
Tuna	158	59%
Calf liver	218	52%
Chicken	187	34%
Salmon	158	32%
Turkey	153	32%
Venison	217	27.5%
Potatoes	161	27%
Cod	119	26%
Sunflower seeds	204	23.5%
Halibut	159	22.5%

The B6 RDA consists in as little as two mg, but the same amount is highly effective in generating more than 60 types of enzymes. B6 sources include the foods high, in proteins (i.e., poultry and other types of meat, eggs, fish, breakfast cereals, bread etc). Therefore, if you are a vegetarian, you do not need to worry about not getting your daily RDA due to your meat-lacking diet. Doctors advise that the B6 vitamin helps strengthen the immunity, optimize metabolism, and supports the heart function.

Vitamin B6 supports the enzyme involved in the creation of the heme component of hemoglobin for the transport of oxygen by red blood cells. Its intake has been shown to reduce damaging homcystene levels in the blood, which at high levels is associated with cardiovascular diseases. B6 also supports an enzyme essential to the creation of several neurotransmitters in the brain.

Neurotransmitters are essential chemical messengers that deliver nerve impulses across the synaptic gap to the neighboring brain cell. Without them, your brain just stops and information doesn't get processed.

It is good for the pregnant women to include a higher dose of B6 vitamin (eat more foods rich in proteins) in their diets and help their babies develop normally. Patients suffering from asthma or diabetes need B6 vitamin supplements. Nevertheless, do not abuse of the B6, as amounts larger than the ones written in the table below are toxic:

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months	0.1 mg*	0.1 mg*		
7-12 months	0.3 mg*	0.3 mg*		
1-3 years	0.5 mg	0.5 mg		
4-8 years	0.6 mg	0.6 mg		
9-13 years	1.0 mg	1.0 mg		
14-18 years	1.3 mg	1.2 mg	1.9 mg	2.0 mg
19-50 years	1.3 mg	1.3 mg	1.9 mg	2.0 mg
51+ years	1.7 mg	1.5 mg		

Biotin (B7) is one of Vitamin Bs that has an important role in converting the carbohydrates, fats, and proteins into energy. The daily recommended allowance for B7 is 0.03mg for men and for 0.01mg women. Individuals with a biotin deficiency will experience hair loss, hallucinations, depression and fungal infections. It can be found in very low amounts, in peanuts, almonds, sweet potatoes, eggs, and tomatoes.

Vitamin B7 rich foods

- Eggs
- Yeast
- Cauliflower
- Raspberries
- Bananas
- Walnuts
- Almonds



B7 acts as a critical coenzyme for the necessary function of our metabolism. Based on our body's needs, glucose gets converted to fatty acids, and back again, and the process is highly dependent on this vitamin. Despite it was found in 1927, scientists did not understand its role as an essential nutrient until 40 years later.

World's Healthiest Foods rich in folate		
Food	Cals	%Daily Value
Lentils	230	89.5%
Pinto Beans	245	73.5%
Garbanzo Beans	269	70.5%
Spinach	41	65.7%
Black Beans	227	64%
Navy Beans	255	63.7%
Kidney Beans	225	57.5%
Collard Greens	49	44.1%
Turnip Greens	29	42.4%
Lima Beans	216	39%

Folic acid (Folate) or vitamin B9 is particularly useful for pregnant women, as it helps the body in the cell growing process. In addition, RDA doses of the B9 can help us lose weight, sleep better and support the overall wellbeing, as it produces

certain chemicals with a prolific effect in all the above named activities and processes.

Most people do not know this, but B9 helps patients keep their blood cholesterol in normal parameters, and thus prevents future strokes or heart attacks.

Males and females should make sure to ingest 0.02mg of folic acid daily. Pregnant women should ingest 0.06mg daily. Folate deficiency leads to anemia, apathy, poor growth, and irritability, among others.

Although the term “folate” technically refers to the water-soluble B-vitamin that is naturally present in some foods, it is often used to refer to both naturally occurring folate and folic acid. Research indicates that both folate and folic acid are converted in the body to yield the same active form called tetrahydrofolate.

Increasing B9 intake has been shown to reduce damaging homocystene levels in the blood. High levels of homocystene are associated with cardiovascular concerns. It is especially important for pregnant women because it protects the baby’s development of the brain and spinal cord.

The same as the rest of the vitamins of the B complex, the cobalamin or B12, helps breaking down the fats, the carbohydrates and the proteins into energy, but this is not all. It helps protect the red blood cells and brain nerve cells, especially those located in the brain (by forming a fatty layer around them), and prevents heart attacks.

The problem is that the body cannot absorb this vitamin, although we only need small amounts of it daily; thus, the body generates an adjuvant substance that aids the body in processing the B12 vitamin. B12 can be found in eggs, meat and fish, liver. As B12 is mostly found in animal foods, vegans will need extra B12, therefore supplements are recommended.

B12 deficiencies cause anemia, as a result of the body not being able to rely on its red blood cells. Pregnant women require more of this vitamin, as the low B12 amount they ingest every day is absorbed by the fetus.



In conclusion, having a diet rich in leafy green vegetables, fish and seafood, whole grains, poultry and other meats, dairy products, eggs, citrus, specifically oranges, and beans and peas, is essential, as these foods contain different B vitamins, carrying important processes throughout the body and maintaining us healthy by producing and protecting the red blood cells.

Vitamin C

Vitamin C has got to be the most widely known vitamin these days. It is not surprising because the body needs it for over 300 functions. In fact, Vitamin C has been proved to help protect against heart disease, cancer and other serious illnesses. Without Vitamin C the body would not be able to heal itself either. This is because it is vital for the formation of collagen. Whenever a person has a cut or an injury it is the collagen that helps repair the damage and without sufficient C vitamin this would be almost impossible. Collagen has a multitude of functions in the body, including keeping the organs in place, and it would not be able to do this without sufficient C vitamin.



Vitamin C is also an antioxidant for the body and helps other nutrients to be absorbed better. Folic acid and iron, for example, need Vitamin C to maximize their usefulness. The more C vitamin the body has, the better its defense against colds and other common ailments.

Vitamin C may not prevent a person catching a virus, but it does help speed up the recovery process.

There is vitamin C in almost every fruit and vegetable but some have far higher C vitamin content than others. Cranberries and melons have high C vitamin content. In fact, tropical fruits have the highest amounts of all fruit.

Hot peppers are amongst the richest sources of Vitamin C when it comes to vegetables. The hotter the pepper, the higher its C vitamin content is. Unfortunately, Vitamin C is water soluble so many vegetables lose their effectiveness as a C vitamin provider if they are boiled for a long time. Steaming or quick stir frying vegetables ensures that more of their C vitamin content is retained. The recommended daily amount of Vitamin C is easily obtained from eating five portions of fruit and vegetables a day if they are consumed raw or cooked quickly.

Vitamin C supplements are extremely useful to ensure that people obtain sufficient vitamin C. However, with a balanced diet the amount of vitamin C the body receives is likely to be sufficient. However, if a person begins feeling tired or lethargic, then a vitamin C supplement will help overcome this. There is no danger of having too much vitamin C as the body simply excretes the excess.



Vitamin D

Vitamin D is the only fat-soluble vitamin that is not obtained from foods that are consumed. Instead, Vitamin D is actually obtained by sunlight on the skin. There has been a lot of media coverage about the dangers of getting too much sun but it is essential that the skin is exposed to sunlight to help their body obtain Vitamin D. In fact, a person needs to spend a few minutes out in the sun to get the recommended daily dosage of vitamin D, therefore, there is no point in talking about the negative effect of the ultra-violets.

The D3 vitamin, also known as the cholecalciferol forms under the epidermis and is produced when the sun's rays interfere with cholesterol that is found underneath the skin. This newly produced vitamin D is processed in the liver, and then it is sent throughout the body to help reabsorb the calcium that is found in the small intestine and blood. Some of Vitamin D remains in the liver and kidneys to help gather the calcium from the blood and directed it towards the bones. Therefore, Vitamin D also helps prevent heart diseases such as atherosclerosis.

Perhaps the most vital function that Vitamin D runs is helping the body absorb the calcium that is found in plenty of foods. Calcium is found in teeth and bones, but the body uses it when sending signals across to the nerves or the muscles. Vitamin D fortifies our immunity, helps us fight against diseases and viruses and greatly reduces the risk of developing malignant cells. A vitamin D deficiency leads to the development of osteoporosis, rickets, bowed legs, and muscle cramps and twitching, among others. Children should obtain their vitamin D RDA to grow strong bones and teeth. On the other hand, too much D vitamin can be toxic and it might lead to depression, unhealthy amounts of calcium in the blood cells, stomach and lungs.

Vitamin E

Vitamin E is extremely important for a variety of functions in the body. A healthy heart needs plenty of vitamin E as it has been shown to actually prevent heart disease. Vitamin E can also help contain any existing heart disease and stop it from getting worse.

We all know the benefits of Vitamin E when it comes to skin care. Skin care products such as Dermitage Skin Care, use Vitamin E to replenish skin cells that have aged and died to bring it back by making it actively regenerating and producing younger, healthier and smoother skin as you age. But aside from all these skin care benefits, Vitamin E is also important for older people.

Did you know that at least 200 UI daily of vitamin E can help fight various diseases? Studies found that alpha tocopherol, or Vitamin E has proven to fight particular diseases. Specialists show that Vitamin E may help with oxygen preserving and potentially offers cure for various diseases. Taking 200 IU daily may trim down up to 40% or more of oxygen preserves, which controls organs and the heart. The vitamin seems to have an “anti-coagulant” that has proven to support the overall bodily functions. Vitamin E was discovered to reduce blood clotting and can help prevent heart disease.

The vitamin is said to assist with dilating flowing blood vessels. This means the heart will receive the blood flow it deserves to stay healthy. Vitamin E has also been linked to an anti-aging solution. Many doctors believe that this helpful vitamin will stabilize a person’s overall development or maturity. In fact, German doctors called Vitamin E the fountain of youth. In extensive studies, vitamin E was found to promote blood flow.

According to the findings, Vitamin E when present is a resister to aging.

Vitamin E is linked to promoting hemoglobin. Since aging has an unknown effect on blood cells and bone marrow, doctors believe that Vitamin E's support to hemoglobin is a potential solution to solving disease related to hemoglobin.

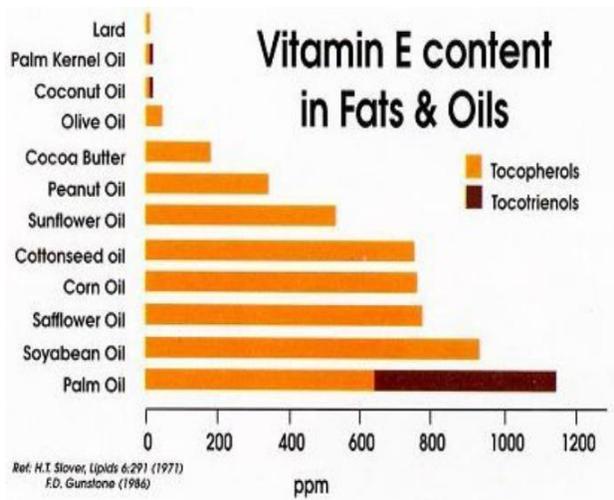
Our hemoglobin structure detains oxygen for an extended time, which means that oxygen will flow smoothly. Vitamin E has been linked to reduced risks of disease, since it is said that oxygen will stay within the cavities of hemoglobin at a lengthier time. This means that the person will live a healthy, youthful life.

Sometimes as we grow older, the blood that forms in our system slows. Vitamin E works to allow blood to flow smoothly. Given the facts, doctors found that this vitamin might reduce the risks of anemia. Vitamin E was discovered to perhaps purify the blood, which allows it to flow smoothly throughout the body. As we grow older, our body experiences many changes, which prompts aging plaques. These plaques, when they build up, will cause wrinkling, sagging, crowfeet, and other aging signs. Vitamin E works to maintain metabolism by potentially keeping away fatty acids, which are saturated.

We need a degree of fatty acids, yet when the acids build it creates elements that promote aging. Vitamin E has shown signs of controlling the blood fats, keeping the fats at bay. Blood fat is also linked to aging. Therefore, we can see that vitamin E has much to offer. Some experts argue that Vitamin E has side-effects that could cause harm; many other experts uphold the ability of support that Vitamin E provides.

Vitamin E has also shown signs of reducing ailments of the muscles. The healthy regimen of vitamin E daily according to experts can reduce arthritic symptoms. According to experts, arthritis and its sister components may link to rapid aging.

The recommended daily amount of Vitamin E that a person requires depends on their body weight. This is connected to the fact that the more fat a diet contains then the more of Vitamin E that is needed. However, the only foods that really contain any reasonable amount of Vitamin E are vegetable oils, seeds, wheat germ, and nuts. It is for this reason that most people should take some form of E vitamin supplement.



Most people obtain enough vitamin E from a normal diet but it is essential that the food that a person eats contains a little fat to help with the absorption of Vitamin E.

There are a few medical conditions that may lead to a deficiency of the E vitamin and may require the person to take E vitamin supplements. Cystic fibrosis causes a person to be unable to digest fats well which leads to less of Vitamin E being absorbed.

Crohn's disease causes to lower absorption rates of Vitamin E and a supplement may be necessary.

Some forms of liver disease can also lead to problems absorbing it, especially through the intestine.

Of course, as fat is required to help absorb sufficient amounts of Vitamin E, anyone on an extremely low-fat diet will need to discuss their options for increasing the amount of e vitamin that their body needs.

Vitamin E is a fat-soluble vitamin. It helps in the overall health of the sexual organs, it is good for the skin and helps promote its healing. It is good for the heart and lungs. Vitamin E acts as an antioxidant, protecting vitamins A and C, red blood cells and essential fatty acids from destruction.

Lack of Vitamin E may cause sterility in both sexes, loss of hair, and miscarriage.

Food sources of Vitamin E include: wheat germ oil, sunflower seed kernels, sunflower oil, safflower oil, hazelnuts, peanuts, corn oil, spinach, broccoli, kiwi, mango.

Vitamin K

Vitamin K is essential for the blood to clot to repair injuries. Whenever a person has a bleeding wound, it is Vitamin K that is present in the blood that stops the bleeding and enables most minor cuts to heal quickly. The “K” is actually derived from the German word “Koagulation”.



There are three different forms of Vitamin K. The first variant of Vitamin K is vitamin K1, also known as phylloquinone. This is the form of Vitamin K that is found in types of plant foods. Vitamin K found in plant foods. The second form of Vitamin K is the vitamin K2, or menaquinone. This type of Vitamin K is formed by friendly bacteria in the intestines. Thirdly, there is vitamin K3 which is also known as menadione and is actually an artificial form of Vitamin K. All three of these types of K vitamin end up in the liver where it is used to create the blood clotting substances.

The best natural sources of Vitamin K are green leafy vegetables, such as spinach. However, because the friendly bacteria in the intestine makes one of the forms of Vitamin K, it is extremely rare for a person to have a deficiency of Vitamin K and so K vitamin supplements are not needed by the majority of people.

Apart from the main function of helping blood to clot, Vitamin K, specifically the Vitamin K1, has an important part to play in the bone building process. This K vitamin is required to retain the calcium in the bones and redistribute it to where it is needed.

Although a K vitamin deficiency is relatively rare there are certain groups of people who may suffer from it. Newborn babies may not have enough of Vitamin K as they have insufficient bacteria in their intestines to produce it. The majority of newborn babies in developed countries are therefore given a K vitamin injection to tide them over until the natural process takes over. That is the only time that a K vitamin supplement will be taken by most people throughout their lives. However, an extended course of antibiotics may lead to a K vitamin deficiency due to the fact that the antibiotics kill the intestinal bacteria as well as the ones that they are being taken to cure. Again, a K vitamin supplement may be given if the course of antibiotics has to continue for a long period.



Food sources of Vitamin K include: dark green leafy vegetables (spinach, cauliflower, cabbage), liver, olive oil, cottonseed oil.

Minerals



A mineral is a kind of micronutrient that is essential for good health. All minerals are inorganic substances absorbed from the earth by plants and cannot be produced by plants or animals.

Minerals are as important as vitamins when it comes to overall health and well-being. Since all enzymatic activities in the body require minerals, your body wouldn't be able to use vitamins and other nutrients without them. Calcium, Magnesium, Chromium, Iron, Selenium and Zinc are just a few of the numerous minerals essential to continued health.

The body utilizes over eighty of these chemicals. They are vital for the growth and production of bones, nails, hair, teeth, nerves, blood, vitamins, hormones and enzymes. In addition, they contribute to the healthy functioning of blood circulation, fluid regulation, nerve transmission, cellular integrity, muscle contraction and energy production.

Because the earth's soil is now so nutrient depleted, even people who eat the healthiest foods often do not consume the required levels of minerals. This results in many kinds of illnesses, including energy loss, premature aging and degenerative diseases such as heart problems, bone disease and cancer.

Consequently, many people choose to take a supplement, which can provide some of the missing minerals. The risk of mineral deficiency can also be minimized through the consumption of a balanced diet that is rich in fruits and vegetables. Good sources of minerals other than fruits and vegetables include meats, nuts, beans and dairy products.

Nutritionally, minerals belong to two groups: macro minerals and trace minerals. Body needs trace minerals in minute amounts and macro minerals in larger quantities. Macro minerals are electrolytes for they help regulate cellular water balance.

Macro minerals:

- Calcium
- Magnesium
- Phosphorus
- Potassium
- Zinc

Trace minerals:

- Chromium
- Copper
- Iron
- Manganese
- Selenium

The following can serve as a rough guide for ensuring the adequate consumption of some of the most important minerals:

Calcium (Ca)

By far the most abundant mineral in your body, calcium makes your bones and teeth strong and hard. Without it, they would be as floppy as your ears. Calcium does not just stay trapped in your skeleton, though. Small amounts of it travel into your blood.

Therefore, it's essential for steadying your blood pressure and helping your muscles contract. One rather important muscle – your heart – needs calcium to keep pumping. No matter how old you are, it's never too late to get more of this important mineral. Most people have calcium deficient diets. Good calcium nutrition throughout life is essential for achieving peak bone mass and preventing deficiency-related bone loss.



Milk



Yogurt



Soya Beans



Orange



Lady's Finger



Cheese



Turnip Greens



Sesame Seeds



Almonds



Cinnamon

This mineral is mainly found in dairy products (milk, yogurt), cereals (wholegrain), fruits (oranges) and vegetables (cabbage, broccoli, kale). Fish such as sardines and salmon are excellent sources of Calcium but are not eaten enough by most people. A sufficient intake of calcium may help to prevent osteoporosis.

Calcium is an important nutrient that builds strong teeth and bones and protects against osteoporosis. However, it is insufficient by itself. When you combine it with Mg, you get the second hardest tissue in the body, next to teeth enamel. It is also essential for muscle contractions, nerve impulses, and the release of insulin into the blood stream.

Research shows that calcium also helps control blood pressure and may help reduce the risk of colon cancer, according to the American Dietetic Association. It also could help you keep off excess weight.

Key organs and bodily functions depend on calcium to operate at their best. That's why health experts recommend calcium supplements if you do not get enough of it in your typical diet. Some of the syndromes of calcium deficiencies include dry skin, muscle pains, weak, fragile bones, kidney stones and osteoporosis. The calcium RDA for each age category and gender group can be seen in the table below:

Age	Male	Female	Pregnant	Lactating
0-6 months*	200 mg	200 mg		
7-12 months*	260 mg	260 mg		
1-3 years	700 mg	700 mg		
4-8 years	1,000 mg	1,000 mg		
9-13 years	1,300 mg	1,300 mg		
14-18 years	1,300 mg	1,300 mg	1,300 mg	1,300 mg
19-50 years	1,000 mg	1,000 mg	1,000 mg	1,000 mg
51-70 years	1,000 mg	1,200 mg		
71+ years	1,200 mg	1,200 mg		

Magnesium (Mg)

This is the least common major mineral in your body, but that does not hold magnesium back. First, it helps keep your bones and teeth healthy. It makes sure calcium, potassium, vitamin D, and proteins do their job. When you flex your muscles, you need magnesium to help them relax again.

Recently, experts even found a connection between magnesium and heart health. A deficiency of the mineral could increase your risk of heart attack and high blood pressure.



Magnesium is a mineral necessary to over 300 enzymatic steps in the body, being critical for bone and joint health, cardiovascular health, the endocrine system, muscular health, and the metabolism.

This mineral is required at the center of every molecule of chlorophyll – the green pigment in plants – which is why green leafy vegetables are rich in it.

Magnesium is widely distributed in plant and animal foods, especially legumes, nuts (almonds, cashews, and peanuts), fruits (apples, bananas), vegetables (carrots, broccoli, spinach, avocado, and kidney beans), chocolate, cereals, soymilk, fish (halibut). Magnesium controls bio- chemical reactions in body and is crucial to good health. Dietary deficiency of magnesium may occur in elderly people, alcoholics, pregnant ladies, and people suffering from diarrhea.

Studies show that taking magnesium supplements during pregnancy reduces birth defects.

Magnesium RDA:	Male	Female	Pregnancy	Lactation
Birth to 6 months	30 mg*	30 mg*		
7–12 months	75 mg*	75 mg*		
1–3 years	80 mg	80 mg		
4–8 years	130 mg	130 mg		
9–13 years	240 mg	240 mg		
14–18 years	410 mg	360 mg	400 mg	360 mg
19–30 years	400 mg	310 mg	350 mg	310 mg
31–50 years	420 mg	320 mg	360 mg	320 mg
51+ years	420 mg	320 mg		

Phosphorus

The second-most plentiful mineral in your body works hand-in-hand with calcium to build and maintain strong bones and teeth. Phosphorus is a crucial ingredient in DNA and cell membranes and helps make healthy new cells all over your body. To top it off, phosphorus helps turn your food into energy.

Phosphorus deficiency is rare; however, it is imperative to maintain a proper balance of magnesium, calcium and phosphorus at all times. Some of the foods rich in phosphorus are: dairy, poultry, meat, fish, and whole grains.



Sesame Seeds

Cashews

Brazil Nuts

Wheat Bran

Mushrooms

Dried Beans

Almonds

Garlic

Pumpkin Seeds

Approximately 85% of the body's phosphorous is found in the bones, together with calcium forming hydroxyapatite, which provides the compressional strength of bones.

Phosphorous helps maintain acid-alkaline balance of pH by acting as one of the main buffers, and it also plays an important role in red blood cells' ability to release oxygen to tissues through the body.

Recommended daily allowance for Phosphorous:

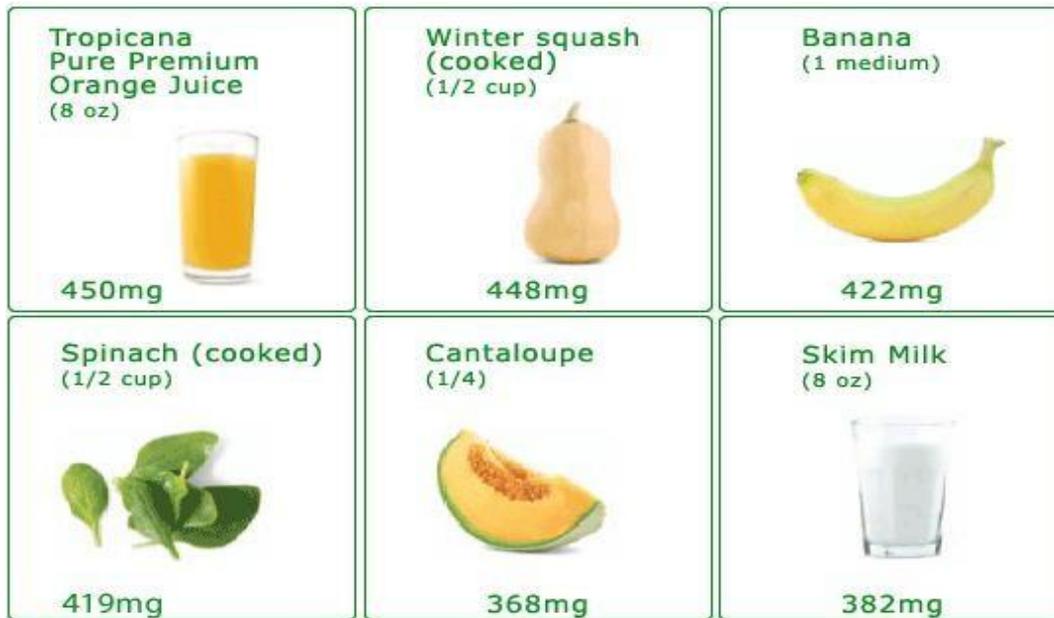
Life Stage Group	Age Range	RDA
Males	31-50 yr.	700 milligrams/day
Males	51-70 yr.	700 milligrams/day
Males	> 70 yr.	700 milligrams/day
Females	9-13 yr.	1250 milligrams/day
Females	14-18 yr.	1250 milligrams/day
Females	19-30 yr.	700 milligrams/day
Females	31-50 yr.	700 milligrams/day
Females	51-70 yr.	700 milligrams/day
Females	> 70 yr.	700 milligrams/day
Pregnancy	< 18 yr.	1250 milligrams/day
Pregnancy	19-30 yr.	700 milligrams/day
Pregnancy	31-50 yr.	700 milligrams/day
Lactation	< 18 yr.	1250 milligrams/day
Lactation	19-30 yr.	700 milligrams/day
Lactation	31-50 yr.	700 milligrams/day

Potassium

It is an essential mineral that, in combination with sodium and calcium, maintains normal heart rhythm, regulates the body's water balance, and is responsible for the conduction of nerve impulses and the contraction of muscles. The body of an average-sized person contains about 5 ounces (140 g) of potassium. Blood levels of the mineral are controlled by the kidneys, which eliminate any excess in the urine.

Potassium deficiency is rare because almost all foods contain potassium. The best sources of potassium include lean meat, whole grains, green leafy vegetables, beans, and many fruits (especially bananas and oranges). A diet that includes these foods is sufficient for obtaining adequate amounts of potassium.

Since potassium sources are so abundant, for most people potassium deficiency is not a concern. The elderly, however, are at a greater risk for deficiency. The main reason the elderly should be concerned about substantial deficiencies is because their kidneys and other organs tend not to function as they used to. This results in the system not being able to absorb and regulate the amount of potassium in the body.



Potassium is the major positively charged ion in the fluid inside of cells, whereas sodium is the major positively charged ion in the fluid outside of cells.

Keeping your blood pressure steady, maintaining your heartbeat, balancing water in your cells, and assuring your muscles and nerves work properly are a few of potassium's many important jobs. Like magnesium, this mineral might be essential for heart health. The Potassium RDA for different groups is:

Age	Female	Male
Birth to 6 months	400mg	400mg
Infants 7 - 12 months	700mg	700mg
Children 1 - 3 yrs	3000mg	3000mg
Children 4 - 8 yrs	3800mg	3800mg
Children 9 - 13 yrs	4500mg	4500mg
Teens 14 - 18 yrs	4700mg	4700mg
Adult 19 - 49	4700mg	4700mg
Adult 50+ yrs	4700mg	4700mg

Zinc (Zn)

Zinc is a mineral that is found in almost every cell in the human body. Despite its importance, this mineral is often taken for granted. A lot of people tend to remember zinc when they have a cold or sore throat. These people take zinc supplements and lozenges to treat colds or sore throats. However, you should bear in mind that zinc won't cure these ailments. The mineral, however, will help boost the immune system so the cold won't develop into something more serious. In addition to these health benefits, zinc is found in many food groups and is important for nourishing the skin, boosting the functions of the reproductive system.



Oysters



Chicken



Cheddar Cheese



Cashews



Watermelon Seed



Almonds



Milk



Red Meat



Yoghurt



Pumpkin Seed



Salmon



Cacao/Cocoa
Dark Choc

Zinc is a nutritionally essential mineral needed for many functions in the body, but perhaps most commonly noted for its immune support. Over 300 different enzymes depend on zinc for the ability to promote vital cell processes. Due to its role in genetics and cell division zinc deficiency can cause impaired growth in children. Zinc is necessary for normal healthy wound healing.

The Zinc content of foods varies from exceptionally high levels in oysters, to negligible in refined foods or those with a high fat content. The best animal source of Zinc is found in lean red meat, which has at least twice that of chicken. Cereals and wholegrain foods also provide some zinc. Zinc is also found in liver, chicken, turkey, dairy products, and much more.

Zinc is vital for prostate gland function and the growth of reproductive organs. People suffering from diarrhea, kidney disease, excessive perspiration, diabetes can be low on zinc. However, too little or too high levels of zinc can be harmful. Zinc deficiency can lead to impairment of taste, poor immune system, and skin problems.

High levels of zinc, on the other hand, may cause cramps, anemia, changes in cholesterol levels, loss of libido, impotence, and dizziness. The right levels of zinc may improve brain function and hasten the healing of wounds.

The RDA for Zinc for different group categories is as it follows:

Age	Male	Female	Pregnant	Lactating
0-6 months	4 mg	4 mg		
7-12 months	5 mg	5 mg		
1-3 years	7 mg	7 mg		
4-8 years	12 mg	12 mg		
9-13 years	23 mg	23 mg		
14-18 years	34 mg	34 mg	34 mg	34 mg
19+ years	40 mg	40 mg	40 mg	40 mg

Chromium (Cr)

Chromium helps metabolize glucose. We do not get enough chromium from our diet. Athletes, pregnant ladies, they all need a supplemental boost. The richest dietary sources of Chromium are spices such as black pepper and brewer's yeast, raisins, mushrooms, prunes, nuts, beer, red wine and asparagus.

Chromium has not been recognized as an essential nutrient until 2001. It enhances the effect of insulin by aiding uptake of glucose from the bloodstream.

Brewer's yeast is a wonder food. It is rich in traces of mineral chromium. This mineral helps the pancreas produce more insulin. It is one of the best supports for normal handling of sugar by the body.

According to an article by Dr. Richard J. Doisy and others, which appeared in the Medical World News, Brewer's yeast has lowered the insulin requirements of many diabetes patients.

Broccoli has long been a popular food in Europe. This vegetable has proved to be an effective anti-diabetic food. It is a rich source of chromium, a trace mineral that seems to lower blood sugar. It regulates blood sugar, thereby often reducing the medication and insulin needs of diabetes. In cases of mild diabetes, chromium may prevent the onset of the full-fledged disease. If a person's glucose tolerance is on border, chromium can help control it. Even low blood sugar levels can be brought to normal with chromium.



The RDA of Chromium for each group category is as it follows:

Age	Infants and children (mcg/day)	Males (mcg/day)	Females (mcg/day)	Pregnancy (mcg/day)	Lactation (mcg/day)
0 to 6 months	0.2				
7 to 12 months	5.5				
1 to 3 years	11				
4 to 8 years	15				
9 to 13 years		25	21		
14 to 18 years		35	24	29	44
19 to 50 years		35	25	30	45
>50 years		30	20		

Copper (Cu)

Foods high in Copper include kidney, liver, kidney, shellfish, nuts and wholegrain cereals. Copper helps in building bones, accelerates the healing process and helps maintain healthy nerves and joints. Together with iron, it helps form red blood cells. Copper deficiencies are rare and can lead to osteoporosis. There is no RDA for Copper.



The minerals Selenium, Copper, and Zinc have also been found to improve the look and health of the skin. Selenium can be used as a topical treatment or a dietary supplement in an effort to prevent skin cancer. Zinc, copper, and vitamin C work together to keep skin healthy and firm, by forming collagen.



Iodine

Iodine is vital to your hair growth. Sheep farmers long ago found that vegetation-lacking iodine due to iodine-depleted soil would adversely affect the growth of wool in their sheep. Likewise, to avoid hair loss, you need iodine. It is synthetically added to table salt, however, in this form, it is not assimilated well into your body and can, therefore, cause iodine overload.

An excess of iodine in the body can adversely affect the thyroid. The lack of iodine can cause hypothyroidism. In hypothyroidism, your cell metabolism slows down and body cells and hair cells don't receive the energy they need to function properly.

When you lack iodine, you will lose more hair than normal and may even lose eyebrow hair.

You can check your thyroid with a basal thermometer, not a digital thermometer, by placing it in your underarm first thing when you wake up. Then, don't move for 10 minutes. Now look at the temperature. The normal body temperature for good thyroid function is 97.8 to 98.2 degrees C. Take this measurement for 5-10 days. If your temperature is below 97.6 and lower, for the 5-10 days, you will want to check with your doctor for more directions and information. You definitely have low thyroid function.

Menstruating women should start this 5-10 day check on the 3rd day of their period. It is best to use non-iodized salt and get your iodine from natural foods. These include seaweed, salmon, seafood, lima beans, molasses, eggs, potatoes with the skin on, watercress, garlic, strawberries, and cranberries, among others.

The World Health Organisation has estimated that approximately 2 billion people (30% of global population) do not receive adequate iodine.



The RDA of Iodine for each group category is as it follows:

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months	110 mcg*	110 mcg*		
7-12 months	130 mcg*	130 mcg*		
1-3 years	90 mcg	90 mcg		
4-8 years	90 mcg	90 mcg		
9-13 years	120 mcg	120 mcg		
14-18 years	150 mcg	150 mcg	220 mcg	290 mcg
19+ years	150 mcg	150 mcg	220 mcg	290 mcg

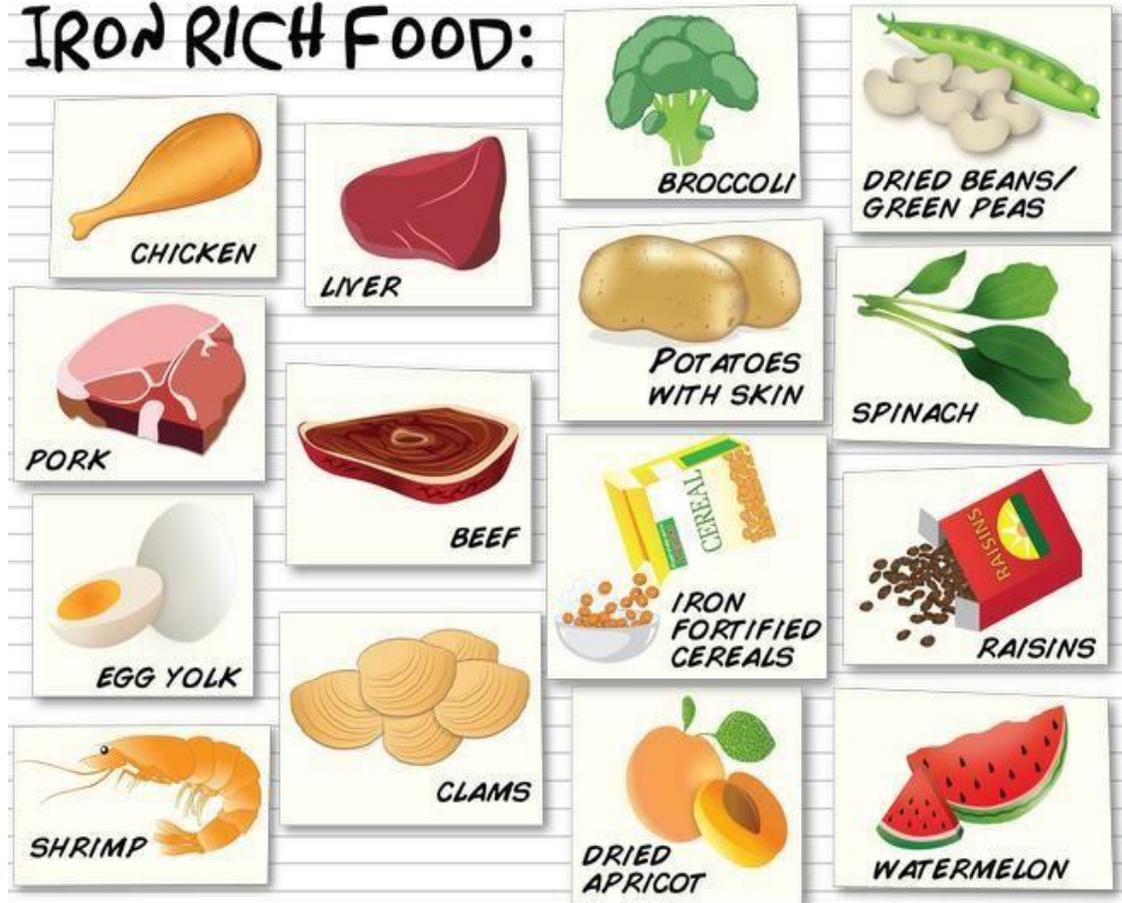
* Adequate Intake (AI)

Iron, together with copper, is essential to building blood. Young girls, strict vegetarians, athletes are usually low on iron. Without a teaspoon of this mineral in your body, you couldn't breathe.

Iron makes up hemoglobin and myoglobin, two compounds that carry oxygen throughout your blood and your muscles. No wonder you feel weak and listless when you are iron deficient. Meat provides one of the richest sources of iron.

Vegetables and cereals also provide iron, but in low concentrations. A good iron intake is particularly important for menstruating women. Do not take calcium and iron together for they neutralize each other. Adults over 50 do not need extra iron unless the doctor detects deficiency.

IRON RICH FOOD:



Iron is probably the world's earliest supplemental nutrient. As early as 4000 B.C., physicians gave iron to wounded warriors to compensate for iron lost through bleeding during battles. It is an essential component of hemoglobin, which enables red blood cells to transport oxygen through the circulatory system.

Due to monthly loss of iron through menstruation, women in child bearing years have a higher daily recommended intake than men.

The RDA of Iron for each group category is as it follows:

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months	0.27 mg*	0.27 mg*		
7-12 months	11 mg	11 mg		
1-3 years	7 mg	7 mg		
4-8 years	10 mg	10 mg		
9-13 years	8 mg	8 mg		
14-18 years	11 mg	15 mg	27 mg	10 mg
19-50 years	8 mg	18 mg	27 mg	9 mg
51+ years	8 mg	8 mg		

* Adequate Intake (AI)

Manganese (Mn)

Manganese is a mineral supporting the bone production (therefore it helps us prevent osteoporosis), it keeps blood sugar levels under control, stimulates the production of collagen, which diminishes over time and protects against oxidative stress.

Manganese is necessary for the healthy formation of bone, cartilage, and collagen. It is also critical for blood glucose regulation, and several steps of energy metabolism.

Relatively high concentrations of Manganese have been found in tea, brown bread, nuts, ginger and cereals (oats), brown rice, pumpkin seeds. The concentration of Manganese in crops depends largely on soil quality.

It has been found that only one cup of oats per day ensures the necessarily recommended dosage and helps us fight against aging.



Manganese is an essential mineral for health. We should be able to get an adequate supply of manganese from our natural diet, yet many people are deficient in this critical mineral. The RDA of Mn for each group category is as it follows:

Adequate Intake (AI) for Manganese			
Life Stage	Age	Males (mg/day)	Females (mg/day)
Infants	0-6 months	0.003	0.003
Infants	7-12 months	0.6	0.6
Children	1-3 years	1.2	1.2
Children	4-8 years	1.5	1.5
Children	9-13 years	1.9	1.6
Adolescents	14-18 years	2.2	1.6
Adults	19 years and older	2.3	1.8
Pregnancy	all ages	-	2.0
Breast-feeding	all ages	-	2.6

Selenium (Se)

Selenium is absorbed from soil either in plant produce or livestock. Selenium deficiency has been linked to cancer and heart disease. While most minerals are associated with a single bodily function, selenium is one nutrient that can provide good health for your entire body.

It is involved in the function of a number of selenium-dependent enzymes called selenoproteins. It is also essential for the creation of antioxidant enzymes, such as peroxidase, which prevent damage from reactive oxygen species. It is also a component of an enzyme which regulates thyroid hormones. These enzymes can activate or inactivate thyroid hormone, thereby impacting growth, and metabolism.

Healthy hair, skin, and eyes are all contributory to selenium. Selenium works closely with antioxidants to help prevent an increase in free radicals in the system. It is also beneficial in regulating the thyroid and immune system. If you are feeling energized and healthy, you may have selenium to thank for it. Selenium produces antibodies, which basically forms a chain of protection in the body. This one feature of selenium is important because it means that you are protected from a variety of viral and toxic invaders that can result in serious illness.

One serious health condition for which selenium may provide protection is cancer. The good news about selenium is that it may be protecting you from cancer and other health conditions without you even being aware. When you consume plant food, seafood, and meats on a regular basis, there is a good chance that you are acquiring sufficient selenium.

Scientists have also discovered that it may be an effective treatment method for people diagnosed with cancer. Although selenium has been found beneficial to killing cancer cells in prostate cancer, there is promise that it may help treat other forms of cancers as well. This is good news to the millions of people who are suffering from one of the 200 types of cancer.

Since the body only requires a small amount of selenium (about 60 micrograms), it is very unlikely that you will develop a selenium deficiency. However, you should make sure that you are getting sufficient selenium. Your heart can become weakened if you have a selenium deficiency.

Cereals, seafood and meat products are the best sources of Selenium and are the main contributors to the daily Selenium intake. Most vegetables and fruits are relatively low in this mineral.

The RDA of Selenium for each group category is as follows:

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months	15 mcg*	15 mcg*		
7-12 months	20 mcg*	20 mcg*		
1-3 years	20 mcg	20 mcg		
4-8 years	30 mcg	30 mcg		
9-13 years	40 mcg	40 mcg		
14-18 years	55 mcg	55 mcg	60 mcg	70 mcg
19-50 years	55 mcg	55 mcg	60 mcg	70 mcg
51+ years	55 mcg	55 mcg		

Health Food Supplements Consumer Guide

Health food supplements are one of the hottest selling products in the market these days. Their total consumption values billions of dollars in the U.S. alone. Recent surveys show that more than half of the adults in the U.S. consume health food supplements in different forms, such as tablets, capsules, powders, soft gels, gel caps and liquids.

The increased consumption of health food supplements can be attributed to public awareness of health issues and improved standard of living in our society. Many studies have shown that there is a close correlation between health and nutrition. Insufficient supply of nutrients can weaken our body defense mechanism, causing medical problems from common ailments to more severe illnesses in the long term.

There are different types of health food supplements, including macronutrients (amino acids, proteins, essential fatty acids), micronutrients (vitamins and minerals), enzymes (digestive enzymes and antioxidant enzymes), probiotics (beneficial bacteria in the gut), and herbal supplements. These supplements have unique functions in our body. They are either essential for life and good health, modulate our immune system or help with liver detoxification, digestion, mental clarity, etc.

Many people argue that there is no need to consume health food supplements as long as you have a healthy lifestyle and eat a balanced diet.

While this may be true, the fact is maintaining a healthy lifestyle and proper diet is difficult to achieve by many people.

Over the past few decades, the green revolution has changed the farming practices over the world. We use more chemical fertilizers, more pesticides to grow the food produce in order to increase harvest and shorten the growth period. As a result, soil nutrients and the population of beneficial soil bacteria are depleted rapidly, and the produce we grow today contain less micronutrient than before.

A stressful lifestyle, improper eating habits, imbalanced diet and increased exposure to chemicals such as environmental pollutants (air, water) and pesticides, drugs, hormones, heavy metals in foods also weaken our body gradually.

Although health food supplements can be beneficial to our health, consumers should still choose the products carefully. Currently, there is little regulation on the quality of health food supplements. The composition of some of them may not match the label claims, and the quality of raw materials and finished products is not guaranteed. Therefore, consumers should only buy from reputable health food manufacturers, read the labels carefully and read more related literature.

Here are some general rules for buying health food supplements:

1. Supplements made from whole foods, natural sources are better than the synthetic ones. They are more bioactive, can be absorbed readily, and less likely to be contaminated by chemicals such as coal tars used in chemical synthesis.
2. Protein-bonded vitamins and minerals (vitamins and minerals in organic form, binding to amino acids) are more bioactive than the inorganic forms.
3. Buy supplements using safe extraction methods, such as cold pressed

extraction or supercritical extraction. This can avoid the harmful residue from chemical extraction.

4. Herbal concentrate and extract are usually more effective than the raw herbs.
5. Organically grown or wild crafted herbs are less likely to be contaminated by heavy metals, pesticides and other chemicals.
6. Read the labels, do not consume more than the recommended dose.
7. Be careful when consuming certain herbal supplements, such as Ma Huang / ephedra, Kava Kava, comfrey, etc. Some studies have shown that these herbs may cause severe side effects to some people. Stop using them if unusual signs appear after consumption.
8. Some health food supplements may interact with drugs, either by decreasing or increasing their effects. Consult your doctor if you are currently taking medications.
9. Pregnant and nursing women, people with specific medical conditions should consult the doctors when consuming health food supplements.
10. If in doubt, contact the supplement manufacturers or distributors for more information of their products.
11. Health food supplements are available in many places, such as grocery stores, health food stores, drug stores, pharmacies, supermarkets, department stores, online stores, etc. Be a smart consumer, compare the price and service before purchase.

How to Tell If You Are Low in Vitamins and Minerals



Your general health status can be affected by prolonged exposure to the sun but, it can also suffer changes due to the lack of vitamins and minerals. It can be a tricky situation that can make you treat the problem the wrong way.

Your body needs the minerals and the vitamins to work properly. Food is the main source that offers everything a healthy body requires, and if it doesn't get the adequate amount of substances, it starts to give you signs that something is not ok, and it needs vitamin and mineral supplements.

Chapped lips are a sign of lack of vitamin A

Your skin is the first to show you that you need more vitamins and minerals because these are the main elements that produce collagen, which is why their absence leads to the occurrence of brown spots, dry skin, and wrinkles.

If your body is not fed with vitamins C, B12, B6, zinc, iron and essential fatty acids, you will start experiencing eczemas and mouth ulcers.

Reddened, irritated and dry skin is also a consequence of vitamin deficiency, especially due to the lack of vitamins B, E, and zinc. Also, because of this problem, the wounds are difficult to heal.



Dandruff is related to the lack of B vitamins

Not providing your body with enough vitamins and minerals, can affect not only your health but also the beauty of your hair because these improve the blood flow in the scalp, stimulating the hair growth. A course hair that has the tendency of breaking very easily and also the dandruff are the result of the lack of vitamins B2, B6, zinc, magnesium, and biotin.



On the other hand, if your hair tends to become greasy extremely fast or if it's very dry, no matter the beauty

products you'll try, you must know that you have to consume folic acid and vitamin B to restore the health and beauty of your scalp.

If your nails are exfoliated and break all the time, you might want to add A, B6, C vitamins, calcium, selenium and biotin to your diet.

Low magnesium can affect your eyesight

The health of your eyes is guaranteed by the consumption of A, B2, B6, B9 vitamins and zinc, which prevent the occurrence of cataract and macular degeneration.

The vitamin and mineral deficiency can also lead to eye fatigue, blurred vision, itching, burning or sand in the eyes sensation, dark spots that appear in the center of the visual field, eye sensitivity to light and eye twitching.

If you're experiencing tingling and numbness in the hands and feet, then you should know that these are not consequences of tiredness or prolonged standing but the lack of B9, B6 and B12 vitamins.

The PMS is also the result of vitamin and mineral deficiency.

The lack of zinc, magnesium, calcium and B6 and E vitamins, favor the abdominal pain and the headache.



Among other symptoms of nutrient deficiencies are:

- intense muscle cramps - lack of magnesium;
- fatigue - lack of iron;
- chest pain - magnesium deficiency;
- impaired coordination, learning disorders - insufficient amount of vitamins B1, B6, E in the body.

Vitamin and Mineral Supplementation in Children

**AN APPLE A
DAY KEEPS THE
DOCTOR AWAY**



Parents are constantly worrying about every little thing when it comes to their children, especially when their toddlers refuse to eat. The easiest solution to the child food refusal is vitamin and mineral supplementation. In most cases, such a measure has no effect because the lack of appetite can be treated starting with an accurate diagnosis.

In the 60's, the Americans were those who came with the idea that the food can be consumed in the form of a tablet. They promoted pills with vitamins, minerals and proteins instead of food. The logic of this commercial invention is destroyed by nature itself. For example, we all know that we take the vitamins from an apple and these substances are nutritious if they come from the inside of the fruit and not from the inside of a laboratory.

Of all the synthetic vitamins, the formulas containing vitamins A or B can lead to poisoning. From birth until adolescence, most doctors recommend the intake of vitamin D, without exceeding the dose.

Vitamin D intoxication causes damages to the kidneys. Thus the child needs to be hospitalized in a toxicology section. Vitamin A is also dangerous if taken in high doses of drugs. Monoalimnt excessive eating can also be toxic.



Vitamin and mineral supplementation can be taken, if necessary, based only on medical advice and in the recommended amount.

"An apple a day keeps the doctor away" is the phrase all children know since they are in kindergarten. All the nutrients in the fruits come with complex bio-chemical structures that are nature's invention, and are indeed valuable for the human body.

We don't have to be scientists or nutritionists to know that the food offered by nature is built in a balanced way. What we take from a pill will always be inferior in terms of efficiency. All pills come with chemical excipients that exert stress over the human body.

Are Vitamins from Food Better than Those from Pills?



Did you make a habit out of taking multivitamins every single day? Are your mornings associated with taking a colored pill because you're hoping for an improved health? If so, this means you're killing yourself slowly and not because vitamins are bad. The pills are the main responsible agents because these are made of synthetic additives, which are extremely harmful to the human body.

How can substances like sodium benzoate, methyl cellulose, silicon or titanium dioxide that are found in the composition of the pills be good for us?

In the mid-1930s, the pharmacies started offering multivitamins. At first, these supplements were made entirely out of dried fruits and vegetables, but later they started to be commercialized under the form of synthetic pills, which used cheaper ingredients.

Today, millions of people around the world are convinced that vitamins offer them a healthier, more energetic and longer life, but most of them have no idea what these pills really hide, meaning synthetic toxins, which can lead to serious diseases such as arthritis, osteoporosis, cancer or Alzheimer's disease if ingested for a long period.

Many vitamins, especially those who can be chewed, contain Aspartame, which is a substance that triggers illnesses such as fibromyalgia or irritable bowel syndrome. If the vitamins come under a gelatinous form, they most



probably contain skin, cartilages, bones and tissues from sick animals. Other vitamins include artificial sweeteners such as aspartame, acesulfame potassium, sucralose and sorbitol, which can produce mutations of the cancer cells.

If you take synthetic vitamin B12, you should know that it's obtained from the toxic bovine liver, which is full of steroids, antibiotics, and pesticides. Synthetic Vitamin B is also made from petrochemicals, which affect the central nervous system and causes shortness of breath.

Synthetic vitamin A comes from fish liver, but it also contains chemical compounds such as polychlorinated biphenyl (PCBs) and mercury.

Synthetic vitamin C includes a synthetic mixture of acids that irritate the digestive tract and has carcinogenic properties. In its natural state, vitamin A features antioxidant properties.

In a study conducted on many subjects, the researchers found that those who consumed synthetic vitamin A had 8% more chances of developing fatal heart attacks than those who didn't ingest it.

Synthetic vitamin D is derived from irradiated oil. It is toxic to the human body because it reaches the heart, the lungs, and the kidney.

The main natural sources of vitamins that offer us the possibility of having a healthy body are:

- Vitamin A - cheese, carrots, and liver;
- Vitamin B1 - whole grains, pork, nuts, and vegetables;
- Vitamin B2 - dairy, meat, green vegetables with leaves;
- Vitamin B3 - meat, fish, whole grains;
- Vitamin B5 - dairy, eggs and green veggies;
- Vitamin B6 - meat, fish, potatoes, and bananas;
- Vitamin B12 - dairy, eggs, and fish;
- Folic acid - whole grains, vegetables with green leaves;
- Choline - eggs;
- Biotin - eggs, nuts, vegetables, liver, and whole grains;
- Vitamin C- citrus, potatoes, and strawberries;
- Vitamin D - fatty fish, dairy, eggs, sunlight;
- Vitamin E- sunflower oil.

The products offered by nature that offer mineral sources are:

- Calcium - dairy, vegetables with green leaves;
- Phosphorus - meat, chicken, fish, eggs, nuts, and veggies;
- Iron - meat, fish, leguminous plants;
- Zinc - meat, fish, shellfish, dairy, seeds, and leguminous plants;
- Magnesium - seeds, nuts, and vegetables;
- Manganese - brown rice, whole grains, vegetables, nuts, and tea;
- Copper - shellfish, nuts, and cocoa;
- Iodine - dairy;
- Selenium - fish, meat, vegetables, whole grains.

We have to take care of our body, and that means maintaining a balanced diet most of the time. We have to choose the essential nutrients in order to preserve our health and our state of well-being for as long as we can.



Final words



Without an adequate intake of minerals, the body ceases to function. Give your body the best possible chance to operate at an optimal level of health by making sure you consume plenty of those.

Do we need to supplement our nutrition?! It may seem that having a very healthy lifestyle with an abundance of vitamins and minerals is too difficult to maintain nowadays. I'm sure some people can afford it, but can you? And if you decide to live healthier, where should you start?

I trust you've found some answers and guidelines for these questions in "The Vitamin and Mineral Handbook". Thank you for taking the time to invest in your health and I hope this information will serve you well whenever you need it.