PLANT DERIVED MINERALS

The Reference

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PLANT DERIVED MINERALS

The Reference

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"YOU CAN TRACE EVERY SICKNESS, EVERY DISEASE AND EVERY AILMENT TO A MINERAL DEFICIENCY".

Linus Pauling, (Chemist)
Two-Time Nobel Prize Laureate

SYNOPSIS

The importance of minerals to our health has been overlooked for generations. Without minerals we would die. Without minerals, vitamins, enzymes and proteins would do us little good as minerals act as catalysts to enable these nutrients to carry out their tasks.
Plant derived minerals are in the form of tiny particles in suspension in a liquid. Solid or a gas know as "a collod. It is in this form that minerals are present in every cell in our bodies. It is in this form that we absorb minerals into our bodies.

Due to continuous cropping and the ravages of pollution, the soils used to grow fruit and vegetables are seriously deficient in minerals, Our bodies cannot make minerals, we can get them only from the food we eat.

Without essential minerals in our diet we age before our time .We need minerals to keep us healthy, to keep us young, for us to enjoy long, active lives.

A colloid is a gel-like ultramicroscopic particle that is in suspension in a solid, liquid, or gas. A plant derived colloidal mineral contains mineral particles in suspension in a liquid that are between 0.001 and 0.0001 of a micron in diameter, less than 1/7000th of a blood cell in size.

colloid

TYPES OF COLLOID

TYPE	DESCRIPTION	EXAMPLES
Sol	solid in solid/liquid	Coloured glass
Emulsion	liquid in liquid	Paint, Milk
Gel	solid in liquid	Hair Gel, jelly
Foam	Gas in liquid/solid	Shaving cream
Aerosol	Solid/liquid in gas	Smoke, fog

IN THE BEGINNING, THERE WERE MINERALS,
before life, before enzymes, before vitamins.

4,500 MILLION YEARS AGO, the earth took shape from matter from thin clouds of hydrogen condensed under the forces of gravity. The enormous pressures fused the hydrogen atoms into clusters of four to form helium with the release of huge amounts of energy. This free energy continued to build larger and more complex atoms until all the elements were created.

Of the lO9 known elements, 89 occur naturally on earth, the rest are made artificially. The lightest is hydrogen, running through the inert gases, minerals, trace elements and radioactive elements to the heaviest, Unnilennium.

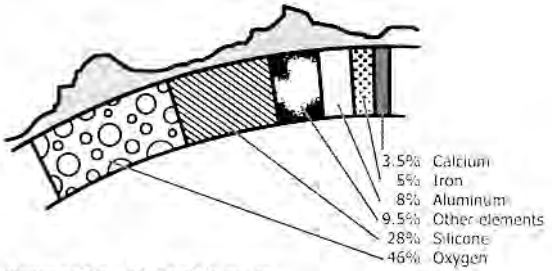
All life depends on the first 53 elements that include all the physiologically active minerals that were tempered in the forge in the beginning.

Rocks are made from non-living, natural substances called minerals, which may be alone or in combination. Marble is pure calcite, for example, but granite is a mixture of quartz, feldspars and mica. Most minerals are formed from silicates (compounds of oxygen and silicon),

Hydrogen and Helium, the simplest elements, were the first to form after the Bing Bang created the universe. Hydrogen and helium make up 97% of the mass of stars, and are far the most abundant elements in the universe.

3,000 MILLION YEARS AGO, in the ancient cauldron of heat and pressure two hydrogen atoms reacted with oxygen and formed water. These seas were more diluted than they are today, but as rains continued to fall, elements of the earth were washed into them. They became rich mineral soups of chloride, magnesium, sodium, phosphates, sulfates and potassium.

Water. A compound of hydrogen and oxygen, makes up about 70% of living cells. It is vital to all organisms as the chemical reaction of the cell can only take place in solution.



Composition of Earth's crust

2,000 MILLION YEARS AGO, amino acids were formed, probably with magnesium as a *catalyst*, and from these came *proteins* and primitive life. For two thirds of the world's present span it had been lifeless. Within the element - rich seas life progressed. One of the most significant was the development of porphyrins. One had the amazing ability to absorb the energy of light and use it to make carbon dioxide from air and water by releasing the oxygen. From this the porphyrin could manufacture carbohydrates from the carbon atoms and water, providing energy for new compounds and growth, and oxygen was released.

The porphyrin was the first appearance of *chlorophyll* and made use of the mineral magnesium as its catalyst. Today all plant life, including algae and fungi, use copper, iron, magnesium, manganese and zinc as catalysts. Green plants and green algae use boron, cobalt and molybdenum as well. Thus plants feed on elemental matter and animals feed on plants.

Amino Acids. Any of a group of simple organic compounds, many occurring naturally in plant and animal tissues and forming the basic constituents of proteins.

Catalyst. A substance that, without itself undergoing any permanent chemical change, .increases the rate of a reaction.

Proteins. Any of a class of nitrogenous organic compounds composed of one or more chains of amino acids and forming an essential part of all living organisms. They are made from atoms of carbon, hydrogen, oxygen, nitrogen and sulfur.

Porphyrin. Name given to a family of intensely coloured compounds of carbon and nitrogen. Chlorophyll and hemoglobin are porphyrins with a central metal atom.

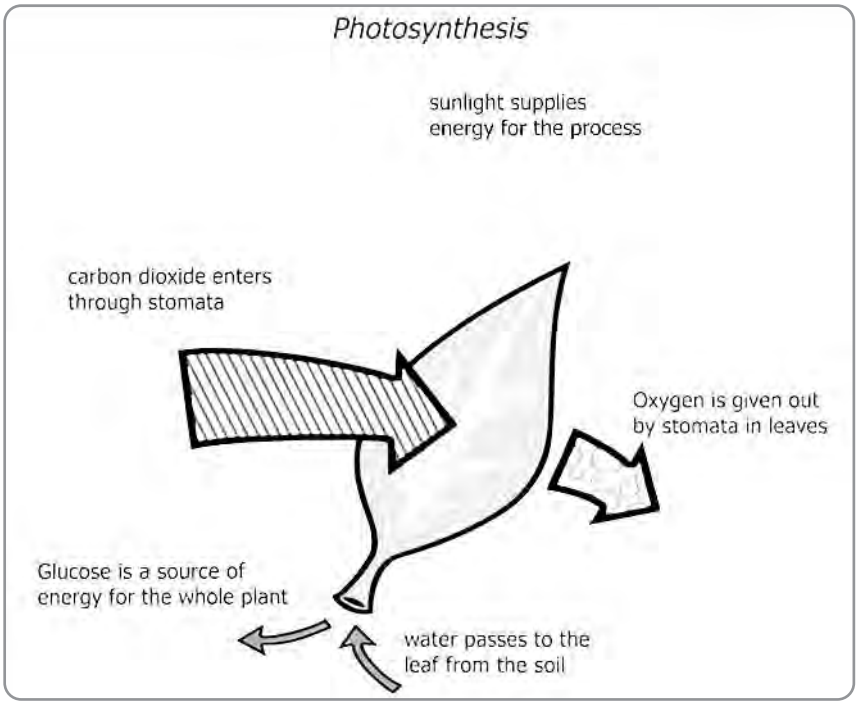
Carbohydrates. An important source of energy. They are made up of carbon, hydrogen and oxygen. One of the simplest carbohydrates is glucose, which is made by plants during photosynthesis. Animals get glucose through their diet. It is then broken down in respiration to release energy.

The slow build-up of oxygen in the atmosphere by *photosynthesis* set the stage for animal life. This reversed the plant's inspiration of carbon dioxide and expiration of oxygen. Without this having occurred with the mineral magnesium as its base, the earth would still be without animal life.

It was due to the primitive worms' use of iron to carry their blood oxygen that made the development of higher life forms possible - to evolve eventually into vertebrates and man.

Two minerals are thus the basis of life - magnesium and iron.

Photosynthesis. The chemical process in plants that enables them to absorb the energy From sunlight to combine carbon dioxide and water. This provides food in the form of glucose for the plant. Oxygen is a waste product of photosynthesis.

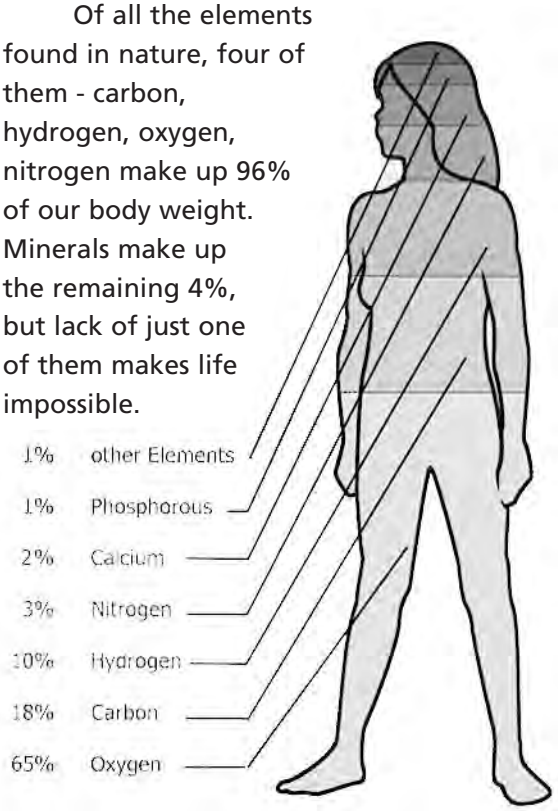


TODAY

Because we now know that minerals are the staff of life, it seems curious that their use in therapeutic medicines has taken so long to develop.

Every tissue in the body has a specific affinity for certain elements and mineral compounds and cannot function properly without them. This is true of *vitamins* too, but it is the mineral that activates the vitamin, just as magnesium activated chlorophyll. Without the right quantity and balance of minerals, vitamins cannot carry out their functions.

Of all the elements found in nature, four of them - carbon, hydrogen, oxygen, nitrogen make up 96% of our body weight. Minerals make up the remaining 4%, but lack of just one of them makes life impossible.



Vitamins. Any of a group of organic compounds essential in small amounts for many living organisms to maintain normal health and development.

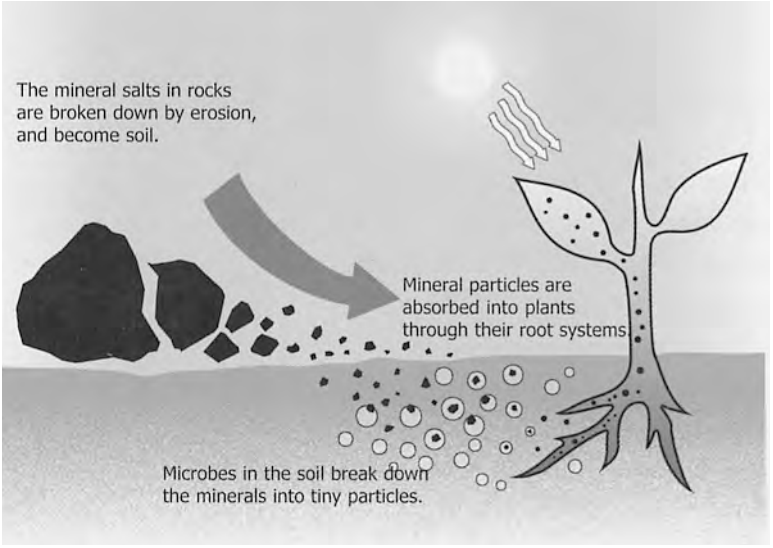
Organic substances. Carbon compounds.There are four main groups that make up and maintain the cells in all living things: *proteins, carbohydrates, fats, and nucleic acids.*

THE COMPLETE LIST OF MINERALS

Aluminium	Gold
Antimony	Hafnium
Arsenic	Holmium
Barium	Indium
Beryllium	Iodine
Bismuth	Iridium
Boron	Iron
Bromine	Lanthanum
Cadmium	Lead
Calcium	Lithium
Carbon	Lutetium
Caesium	Magnesium
Chlorine	Manganese
Chromium	Mercury
Cobalt	Molybdenum
Copper	Neodymium
Dysprosium	Nickel
Erbium	Niobium
Europium	Osmium
Fluorine	Palladium
Gadolinium	Phosphorus
Gallium	Platinum
Germanium	Potassium

PLANT- DERIVED MINERALS

Minerals come from rocks. Rocks are made up of mineral salts that are gradually broken down by erosion to form soil. Microbes in the soil work on the tiny mineral crystals that then pass from the soil into the plants through their root systems and by the process of photosynthesis convert them into an organic colloidal form.



Today

Our link with the minerals in the rocks is through our diet of plants and of the animals that eat plants. There are over 90 different minerals in the earth. Our bodies require large amounts of some, the macro minerals, and trace amounts of others, the micro minerals. The macro minerals include calcium, phosphorus, potassium, sulfur, sodium, chloride and magnesium. The trace minerals include zinc, ron, selenium, manganese, copper, iodine, molybdenum, cobalt, ,chromium, fluorine, silicon, vanadium, nickel, tin and boron.

THE COMPLETE LIST OF MINERALS

Praseodymium	Selenium	Tellurium	Titanium
Rhenium	Silicon	Terbium	Tungsten
Rhodium	Silver	Thallium	Vanadium
Rubidium	Sodium	Thorium	Ytterbium
Ruthenium	Strontium	Thulium	Yttrium
Samarium	Sulfur	Tin	Zinc
Scandium	Tantalum		

FUNCTIONS OF MINERALS

Every living cell on this planet depends on minerals for proper function and structure. Minerals are components of body tissues and fluids and work in combination with *enzymes, hormones*, vitamins and transport substances.

1. Structural

Minerals assist in the following:

- Proper composition of body fluids.
- Formation of blood and bones.
- Maintenance of healthy nerve functions
- Regulation of muscle tone including that of the cardiovascular system.

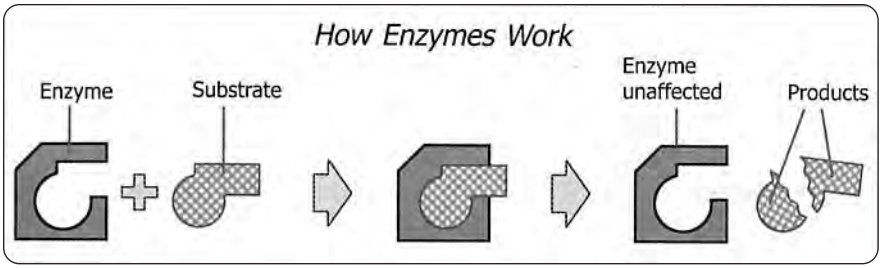
2. Enzyme Activation.

Like vitamins, minerals function as coenzymes, enabling the body to perform functions like energy production, growth and healing. Because all enzyme activity involves minerals, they are essential to the proper utilisation of vitamins and their nutrients.

Enzymes
Protein molecules acting as catalysts in specific biochemical reactions, speeding up the processes. Each enzyme attaches itself to one type of molecule and builds it up or breaks it down into new molecules. The enzyme remains unchanged and can be used again and again.

Transport substances.
Proteins that transport chemicals through cell membranes.

The human body must maintain its proper chemical balance.This balance depends on the levels of different minerals in the body and especially the ratios of certain mineral levels to one another. The level of each mineral in the body has an effect on every other, so if one is out of balance, all mineral levels are affected. If not corrected, this can start a chain reaction that can lead to illness.



Trace Minerals. In nutrition, those elements for which the body's requirement is less than 100mg.per day.

Most people are enzyme deficient. EVERY metabolic function of the body, including the digestion and absorption of the food we eat, depends on enzymes. Enzymes are only produced in the presence of colloidal trace minerals

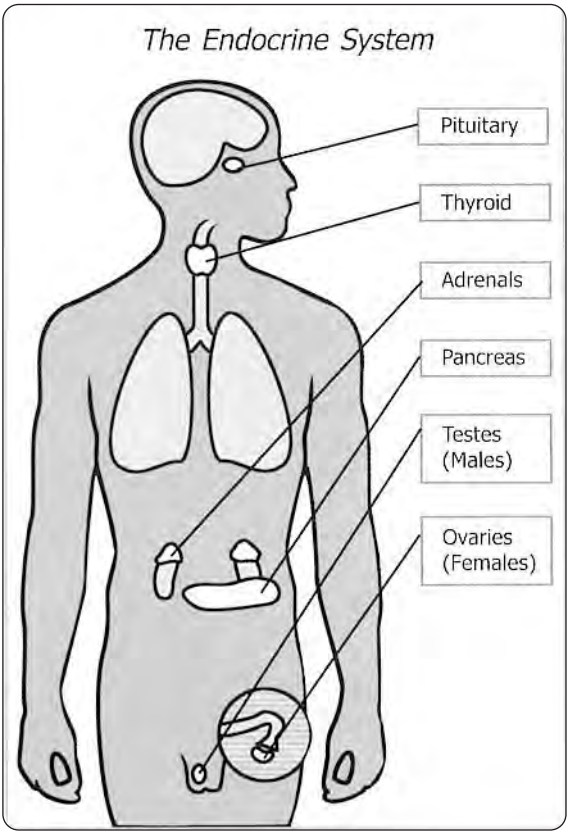
Proteins make up 50% of our dry body weight.

Hormones. Chemical messages that stimulate a response in different parts of the body. They are released into the blood stream and travel to every cell in the body. Only specific cells react to a particular hormone.

Endocrine System is responsible for changes which affect the whole body, or take place over a long period of time. It consists of a collection of glands.

3. Hormones

Trace minerals are an essential part of hormone structures and help regulate the hormonal activity of the entire endocrine system. The *endocrine system* consists of the thyroid, parathyroid, pineal, pancreas, ovaries, testes, thymus, adrenals and pituary glands.



4. Minerals form part of physiologically important substances, such as iron, in hemaglobin, cobalt in B12.

5. Fluid and electrical balance.

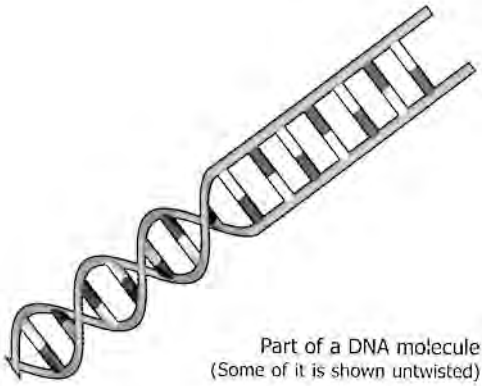
Minerals are essential for proper tissue fluid balance and electrical activity across cell membranes.

6. pH

Minerals are responsible for maintenance and regulation of *pH* of the tissues and blood.

7. DNA Synthesis

Minerals play a critical role in the *synthesis* of DNA, which is the process of replication and duplication of cell structures. Old cells are constantly being replaced with new cells. This process is almost totally dependent upon trace mineral activity.



Part of a DNA molecule
(Some of it is shown untwisted)

pH. The acidity or alkalinity of a solution. Acidity and alkalinity depend on how the hydrogen atoms within a solution behave chemically.

Synthesis. The forming or building of a more complex substance or compound from elements or simpler compounds.

Nucleic acids. Molecules found in the cell's nucleus. There are two types. :
Deoxyribonucleic acid (DNA) is a large twisted molecule. The chemicals within are arranged as a code instructing all activities.
Ribonucleic acid (RNA) is a copy of part of the genetic information found in DNA and carries it to build up proteins from amino acids.

When our bodies cannot continuously produce healthy cells, we prematurely age, and die before our time.

Extracts from Senate Document 264, (1936):-

" Our physical well-being is more directly dependent upon minerals we take into our systems than calories or vitamins, or upon precise proportions of starch, protein or carbohydrates we consume": " This discovery is one of the latest and most important contributions of science to the problem of human health":

" The alarming fact is that foods (fruits, vegetables and grains) now being raised on millions of acres of land that no longer contain enough of certain minerals are starving us - no matter how much of them we eat. No man today can eat enough fruits and vegetables to supply his system with the minerals he requires for perfect health as his stomach isn't big enough to hold them":

"Laboratory tests prove that the fruits, the vegetables, the grains, the eggs, and even the milk and the meats of today are not what they were a few generations ago (which doubtless explains why our forefathers thrived on a selection of foods that would starve us!)":

TODAY'S DIET

Minerals then are essential to the proper functioning of the body, but are we getting sufficient minerals in our everyday diet? **MOST CERTAINLY NOT.**

As far back as 1936, Senate Document 264 warned Americans that the soils used to grow fruits and vegetables were seriously deficient in needed minerals. Continuous cropping and the ravages of pollution even then were robbing the soils of the minerals needed to sustain life.

We get our minerals in organic form from the plants and animals we eat and plants get them in metallic form from the soil, so our mineral intake is dependent on the mineral content of the soil. Over the years there has been a gradual depletion of minerals in the soil due to over- farming. The introduction of artificial fertilisers at the beginning of the last century greatly increased crop yields but put back into the soil only three nutrients:- nitrate, phosphate, potassium, (NPK), sufficient for crops to flourish but nowhere near enough for humans to flourish which is over 70, according to most nutritionists.

Why not just take a mineral supplement?

Most of the minerals that are available in pharmacies and health food stores, whether they be tablets, capsules, or powders, are in their metallic form. They can be toxic if taken in large quantities and are hydrophobic, (hate water), which makes them hard to be absorbed into the body, (with around 15 to 20% absorption), and so most is wasted. In addition they contain typically 2 to 12 minerals only. Some mineral supplements are chelated to increase absorption to around 50%.

All cell activity is carried out at microscopic level. If the mineral supplement is in this form and is also hydrophilic (loves water), it is easily absorbed into the body.

Plant Derived minerals are microscopic, hydrophilic and, in addition, **carry a bioelectric negative charge**. The wall of the intestine is positively charged. All this adds up to almost 100% absorption. MINERALS HAVE TO BE FROM PLANTS TO BE EFFECTIVELY ABSORBED.

WHAT IS WANTED IS A MINERAL SUPPLEMENT WITH ALL THE ESSENTIAL MINERALS WE NEED, AND IN COLLOIDAL FORM.

SUCH A PRODUCT IS AVAILABLE AND HAS BEEN SUCCESSFUL IN THE UNITED STATES SINCE 1926.

Chelate. (pronounced key-late). A chemical process for joining a mineral to an amino acid. It is in this form that minerals are transported through the intestinal walls.

Approximately 70 million years ago, during the Senonium Period when dinosaurs ruled the world, due to a volcanic eruption, a mineral rich rainforest in Central Utah, USA, was covered with 20 to 30 feet of sandstone. Over time this created a deposit of mineral rich soil that was protected by the sandstone. Underneath the deposit was a very hard bed of clay that prevented the minerals from leaching out and simply disappearing into the earth. The soil contained over seventy minerals and is being mined, processed and sold today as a Plant Derived mineral concentrate.

The plant-derived minerals from the deposit are extracted in water without the use of acids or harming heat. They are further processed through a complex array of special filters to allow only the minerals in the final solution.

The final product contains over 70 macro and trace minerals in balanced amounts, as found in nature.

Plant Derived Manufacturing Process

Raw Material Manufacturing Process (U.S.A.):

Raw Material is Mined, Emery Country, Utah

▼

Add purified Water at the factory in Tulsa

▼

Through the filter and leave it to Leach

▼

Multistage Filtration Through a 0.2 micron filter

▼

Quality testing

▼

Solution is filled into sterilised tanks

Finished Goods Manufacturing Process

Dispensin Plant Dervied Minerals in a Clean and Dry manufacturing tank mounted with a propeller stirrer, then mixed until uniform

▼

Quality control

▼

Through a 0.2 micron Filter

▼

Bottled into sterilised bottles then capped and labelled

▼

The product is then shipped out

Plant Derived Minerals
Report of Analysis

Typical Analysis (mg/L).

PLANT DERIVED MINERALS in varying presence and trace amounts, including the following:

Aluminium 930	Europium 0.07	Molybdenum <0.05	Sodium 250
Antimony <0.05	Fluoride 0.0066	Neodynium 0.51	Strontium 1.5
Arsenic <0.05	Gadolinium 0.51	Nickel 11	Sulfur 6950
Barium <0.05	Gallium <0.05	Niobium <0.05	Tantalum <0.05
Beryllium 0.28	Germanium <0.05	Osmium <0.001	Tellurium <0.05
Bismuth <0.05	Gold <0.05	Palladium 0.05	Terbium 0.083
Boron 0.88	Hafnium <0.05	Phosphorus 0.66	Thallium <0.05
Bromine 0.013	Holmium 0.11	Platinum <0.05	Thorium <0.05
Cadmium 0.19	Indium <0.0023	Potassium 27	Thulium <0.05
Calcium 420	Iodine <0.001	Praseodymium 0.073	Tin <0.05
Carbon 4020	Iridium <0.05	Rhenium <0.001	Titanium <0.05
Cerium 0.36	Iron <0.05	Rhodium <0.05	Tungsten <0.05
Caesium <0.05	Lanthanum 0.11	Rubidium 0.19	Uranium <0.05
Chlorine 17	Lead <0.05	Ruthenium <0.05	Vanadium <0.05
Chromium <0.05	Lithium 2.8	Samarium 0.25	Ytterbium 0.2
Cobalt 8.3	Lutetium <0.05	Scandium 0.099	Yttrium 5.4
Copper 0.098	Magnesium 3870	Selenium 0.25	Zinc 36
Dysprosium 0.53	Manganese 150	Silicon 19	Zirconium <0.05
Erbium 0.3	Mercury <0.05	Silver <0.05	

SOME KEY MINERALS AND THEIR FUNCTIONS

MINERAL LIST

- BORON
- CALCIUM
- CHLORINE
- CHROMIUM
- COBALT
- COPPER
- IODINE
- IRON
- LITHIUM
- MAGNESIUM
- MANGANESE
- MOLYBDENUM
- PHOSPHORUS
- POTASSIUM
- SELENIUM
- SILICON
- SODIUM
- SULFUR
- VANADIUM
- ZINC

BORON

Boron is a trace mineral essential for blood biochemical markers of energy and mineral *metabolism.*

Metabolism. Inclusive term for the chemical reactions by which the cells of an organism transform energy, maintain their identity, and reproduce.

Why we need boron:

- Healthy bones.
- Metabolism of calcium, phosphorus and magnesium.
- Enhancement of brain function hence promoting alertness.

Lack of boron may cause:

- Decreased calcium, magnesium and phosphorus levels
- Decreased estrogen and testosterone synthesis.
- Breakdown of hormone function.
- Decreased vitamin D synthesis.
- Decreased steroid synthesis.

CALCIUM

The most abundant mineral in the body, comprising 2% of body weight. Calcium is a nutrient in the news because adequate intakes are an important determinant of bone health and risk of fracture or *osteoporosis*. In the USA alone there are approximately 1~5 million fractures annually with an associated health care cost of $13.8 billion.

Osteoporosis. Disorder in which normal replenishment of old bone tissue is disrupted, resulting in weakened bones and increased risk of fracture. It has no early symptoms and is usually not diagnosed until fracture occurs.

Pre-eclampsia A category of hypertension that occurs late in pregnancy and is characterised by decreased cardiac output and Increased blood vessel resistance.

Rheumatoid Arthritis. An auto-immune disease of unknown cause, it is the most crippling form of arthritis, painful inflammation of joints of the body.

Why we need calcium:

- Strong bones
- Healthy teeth and gums
- Maintenance of regular heart beat and transmission of nerve impulses
- Lowering cholesterol levels
- Help prevent cardiovascular disease
- Muscular growth
- Essential for blood clotting
- Lower blood pressure
- Prevent bone loss associated with osteoporosis
- Participates in protein structuring of RNA and DNA
- Involved in the activation of several enzymes
- Maintains proper cell permeability
- Aids in neuromuscular activity
- Helps keep skin healthy
- Helps protect against *pre-eclampsia* during pregnancy which is the no. 1 cause of maternal death.
- Protects bones and teeth from lead by inhibiting absorption of this toxic metal

Lack of Calcium may cause:

- Osteoporosis
- Aching joints
- Brittle nails
- Eczema
- Elevated blood cholesterol
- Heart palpitations
- Hypertension (high blood pressure)
- Insomnia
- Muscle cramps
- Rheumatoid arthritis
- *Rickets*
- Tooth decay

CHLORINE

Chlorine in the body is in the form of potassium chloride which is very important to efficient glandular function, particularly the liver.

Chloride is an anion (negatively charged atom) generally consumed as sodium chloride or table salt.

Why we need chlorine:

- Maintenance of extracellular fluid volume.
- Is part of most bodily fluids such as blood, sweat and tears.
- Aids digestion.

Lack of chlorine may cause:

- Hypotension (low blood pressure)
- Trauma
- In infants can lead to failure-to-survive anorexia.

Rickets. Bone disease caused by deficiency of vitamin D or calcium. The disease manifests itself in children as softening of bones and abnormal bone growth.

CHROMIUM

Chromium is an essential nutrient required for normal sugar and *fat* metabolism. Chromium functions primarily by facilitating the action of *insulin*. This mineral occurs throughout the body with highest concentrations in the liver, kidney, spleen and bone.

Why we need chromium:

- Metabolism of glucose, hence to produce energy
- Synthesis of *cholesterol*, fats and protein
- Helps maintain stable blood sugar levels through proper insulin utilisation

Lack of chromium may cause:

- *Diabetes*
- Anxiety
- Fatigue
- Glucose intolerance

Fats. An energy-rich store, respired after supplies of carbohydrates are exhausted. One fat molecule consists of three chains of chemicals, called fatty acids, attached to one molecule of glycerol.

Insulin. Hormone secreted by the pancreas. Insufficient insulin in the body results in diabetes. Insulin was one of the first products to be manufactured by genetic engineering.

Cholesterol. A steroid found in body tissues and blood plasma. Cholesterol can be found in large concentrations in the brain, spinal chord and liver. Deposition of cholesterol on the insides of major blood vessels can result in coronary artery disease.

Diabetes. A disorder of metabolism - the way our bodies use digested food for growth and energy. Most of the food we eat is broken down into glucose. For glucose to get into cells insulin must be present. In people with diabetes the pancreas produces little or no insulin.

COBALT

Cobalt plays an essential role in the formation of B12 (cobalamin), which performs a number of important physiological functions. Cobalt is involved in the regulation of the nervous system. Cobalt, via B12 can help decrease hypertension, reduce muscle spasms and promote the healthy formation of mature sperm and ovum.

Why we need cobalt:

- Reduces hypertension
- Helps prevent disorders of gastrointestinal and urinary systems.
- Prevents *migraine* attacks
- Reduces anxiety

Migraine. Headache characterised by recurrent attacks of severe pain, usually on one side of the head. Exact cause unknown. Migraine affects women three times as often as men.

Lack of cobalt may cause:

- Anxiety, agitation
- Migraine
- Psychosomatic disorders
- Sterility

COPPER

Copper is a trace element essential to human health due to the fact that it is part of enzymes, which are proteins that help biochemical reactions occur in every cell. Copper is involved in the absorption, storage and metabolism of iron.

Why we need copper:

- Aids in the formation of bone, hemoglobin and red blood cells
- Healing
- Energy production
- Hair and skin colouring
- Taste sensitivity
- Healthy nerves and joints
- Formation of *collagen*

Lack of copper may cause:

- Osteoporosis
- *Anaemia*
- Baldness
- General weakness
- Impaired respiratory function
- Skin sores
- Increased blood fat levels

Collagen. The fibrous protein constituent of skin, cartilage, bone and other connective tissue. It controls cell shape and differentiation, it is why broken bones regenerate and wounds heal, why blood vessels grow to feed healing wounds.

Anaemia. condition in which the concentration of hemoglobin in the circulating blood is below normal. Iron Deficiency Anaemia (IDA), is caused by insufficient iron, an element essential for the formation of hemoglobin.

IODINE

Iodine is a nonmetallic element. It is converted to iodide in the gut. It forms an essential component of thyroid hormones that regulate cell activity and growth of virtually all tissues.

Why we need iodine:

- Essential for normal growth, development and life span
- Helps metabolise excess fat
- Needed for healthy thyroid gland

Lack of iodine may cause:

- In children mental retardation
- Fatigue
- Weight loss
- *Goiter*

Goiter. a disease characterised by the enlargement of the thyroid gland. causing mechanical pressure on the neighbouring body organs.

IRON

Iron is an essential nutrient that carries oxygen that forms part of the oxygen-carrying proteins, hemoglobin in red blood cells and myoglobin in muscle.
It is also a necessary component of various enzymes. Body iron is concentrated in bone marrow, liver, and spleen.

Why we need iron:

- Production of hemoglobin and myoglobin (type found in muscle tissue}
- Oxygenation of red blood cells
- Essential to many enzymes

Lack of iron may cause:

- Anaemia
- Brittle nails
- Dizziness
- Fatigue
- Fragile bones
- Hair loss
- Difficulty swallowing
- Obesity

LITHIUM

Lithium is a trace element that mediates the transmission of nerve cells by regulating the membrane potential. It has a sedative and non-hypnotic action. It has been used in the prevention of both manic and depressive mood swings. Lithium stimulates the elimination of urea and uric acid.

Anorexia nervosa. An eating disorder primarily affecting adolescent girls and young women, characterised by pathological fear of becoming fat, distorted body image, excessive dieting, and emaciation.

Why we need lithium:

- For healthy bowel movements
- To prevent behaviour disorders
- Helps in preventing eating disorders such as *anorexia nervosa.*

Lack of lithium may cause:

- Behaviour disorders
- Insomnia
- Depression, anxiety
- Gout and various types of pain syndromes

MAGNESIUM

Magnesium is the fourth most abundant cation, (positively charged atom), in the body, with 60% in the bone and 40% distributed equally between muscle and non-muscular soft tissue. Magnesium has an important role in at least 300 fundamental enzymatic reactions.

Why we need magnesium:

- A vital catalyst in enzyme activity. especially enzymes involved in energy production
- Assists in calcium and potassium intake
- Prevents calcification of soft tissue
- Protects the arterial lining from stress caused by sudden blood pressure changes
- Plays a role in the formation of bone and in carbohydrate and mineral metabolism
- Helps prevent cardiovascular disease, osteoporosis
- Helps reduce cholesterol levels
- Reduces *asthma*
- Helps with depression, insomnia, irritable bowel syndrome, chronic pain syndrome and lung disorders.

Asthma. Chronic inflammatory respiratory disease characterised by periodic attacks of wheezing, shortness of breath and a tight feeling in the chest. There is no cure.

Lack of magnesium may cause:

- Confusion
- Insomnia
- Rapid heart beat
- Seizures

MANGANESE

Manganese is a nutrient involved in the *immune system* and energy production.

Why we need manganese:

- For protein and fat metabolism
- Healthy nerves and immune system
- Blood sugar regulation
- Energy production
- Normal bone growth
- Formation of cartilage and synovial fluid of the joints
- Synthesis of bones
- Needed for the utilisation of B1(thiamine) and vitamin E
- Key element in the production of enzymes needed to oxidise fats

Immune System. The name given to the body's internal defenses against disease.

Arteriosclerosis. General term for the condition characterised by thickening, hardening, and loss of elasticity of the walls of blood vessels.

Lack of manganese may cause:

- *Arteriosclerosis*
- Convulsions
- Eye and hearing problems
- Heart disorders
- High cholesterol levels
- Hypertension
- Muscle contraction
- Pancreatic damage

MOLYBDENUM

Molybdenum is an essential nutrient for animals and humans. It is a compound of a number of enzymes.

Why we need molybdenum:

- Nitrogen metabolism
- Conversion of *purines* to uric acid
- Promotes normal cell function
- Impotency prevention

Lack of molybdenum may cause:

- *Impotency*
- Mouth and gum disorders
- Gout
- Anaemia
- Fatigue
- Less urine formation
- Increased fatty acid oxidation

Purine. type of organic base found in nucleic acids of human tissue. Degrades to uric acid which constitutes a large part of body waste

Impotency. The inability to have or to maintain an erection; may affect the libido or desire for sex

PHOSPHORUS

Phosphorus is an essential mineral that is found in all cells within the body. The body of a human adult contains about 400 to 500 gram, with the greatest amount in bone, (85%), and muscle, (14%).
Phosphorus is primarily found as phosphate. It is involved in energy production and DNA.

Why we need phosphorus:

- Helps build bones and teeth
- Helps metabolise fats and carbohydrates

Lack of phosphorus may cause:

- Fatigue
- Loss of appetite
- Nervous disorders
- Weight loss
- Watery blisters

POTASSIUM

Potassium is the main healing element in the body and occurs as colloidal compounds with phosphorus, sulfur and chlorine. With phosphorus it is the main healing constituent of grey nerve fibres and, combined with chlorine, it is the glandular element. Combined with sulfur it is the oxygen transfer element in cells which suspends their decomposition.

Sodium acts with potassium to maintain proper water balance and in the transmission of nerve impulses.

Why we need potassium:

- Healing of wounds
- Healthy nervous system.
- Hormonal balance
- Control of water in the body.
- Build muscle tissue.

Lack of potassium may cause:

- Reduction in muscle mass
- Low serum potassium can result in cardiac failure.

SELENIUM

Selenium is an essential trace element that functions as a component of enzymes involved in antioxidant protection and thyroid hormone metabolism.

Why we need selenium:

- Inhibits oxidation of lipids {fats}
- Vital antioxidant {especially when combined with vitamin E}
- Protects the immune system
- Helps maintain a healthy heart and liver
- For proper pancreatic function

Lack of selenium may cause:

- Exhaustion
- Growth impairment
- High cholesterol levels
- Liver impairment
- Pancreatic insufficiency
- Sterility
- *Prostate enlargement*

Prostate Enlargement. the prostate gland is an essential part of the male reproductive system. Enlargement can be benign; but can block flow of urine leading to chronic kidney disease, or can be malignant.

SILICON

Silicon is a constituent of bone, tissue, organ and nerve sheath, hair, nails and skin. It is used for the removal of morbid waste matter and arthritic nodules and spurs. It is present as a silanate which may play a role in the structure of proteins in the connective tissues.

Why we need silicon:

- Synthesis of collagen.
- Bone growth.
- Healthy waste disposal

Lack of silicon may cause:

- Aberrant metabolism of connective tissue and bone.
- Depressed collagen content in bone.
- Long bone abnormalities.
- Skull bone abnormalities.

SODIUM

Sodium is important in the digestion of food and the viscosity of blood. It aids in keeping calcium in solution so that it can reach all the tissues. As a phosphate it is used for digestion and normal blood viscosity and, as a sulfate, to control the distribution of water in the system and to stimulate the liver and pancreas. Sodium acts with potassium to maintain proper water distribution and blood pressure. It is important in maintaining the proper acid-base balance and in the transmission of nerve impulses.

Why we need sodium:

- To maintain normal blood pressure
- Healthy nervous system
- Maintain water balance

Lack of sodium may cause:

- Fall in blood pressure that could result in shock
- Decreased blood pressure
- Indigestion

SULFUR

Sulfur is a macronutrient and is part the thiamine molecule and important in the formation of coenzymes critical to specific biological processes. The body contains about 140 grams of sulfur. It is found in most cells in the body, but particularly in the skin, nails, hair and joints.

Why we need sulfur:

- Disinfects the blood
- Helps to resist bacteria
- Protects the protoplasm of the cells
- Stimulates bile secretion and protects against toxic substances
- Found in all body tissues and hemoglobin and is needed for the synthesis of collagen

Acne. A common inflammatory disease of the hair follicles and sebaceous glands characterised by blackheads, whiteheads, pustules, nodules, and in its most severe forms, by cysts and scarring.

Lack of sulfur may cause:

- *Acne*
- Growth retardation
- Lowered resistance to disease

VANADIUM

Vanadium is a trace element that is present at low levels in most animal tissues with the highest concentration in kidney, spleen, liver, bone, testes and lung.

Why we need vanadium:

- Essential for growth
- Needed for cellular metabolism
- Inhibits cholesterol synthesis, hence decreases serum cholesterol

Lack of vanadium may cause:

- Diabetes
- Bone demineralisation
- Deterioration of the liver
- Decreased growth rate
- Low blood sugar levels
- Increased serum cholesterol and triglycerite levels
- Tooth decay
- Impaired reproductive ability

ZINC

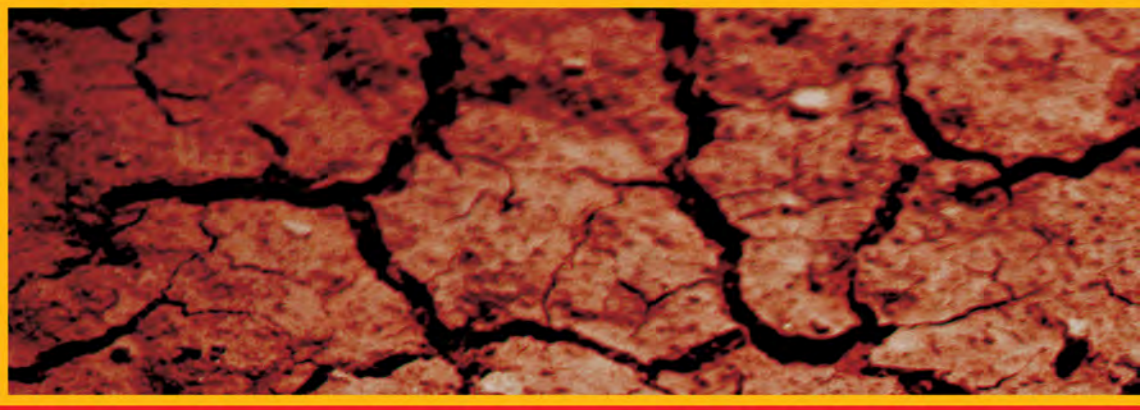
Zinc is an essential trace mineral. The human body has between 1.5 to 2.5 grams of zinc. It is highly concentrated in specialised areas of the brain, pancreas and adrenal gland, but it is present in all cells.

Why we need zinc:

- Important in prostate gland function and growth of the reproductive organs
- Regulation of the oil glands
- Protein synthesis and collagen formation
- Promotes a healthy immune system
- Healing wounds
- Vital for bone formation
- Powerful antioxidant
- Maintains the proper concentration of vitamin E in the blood
- Increases absorption of vitamin A

Lack of zinc may cause:

- Loss of taste and smell
- Acne
- Delayed sexual maturation
- Fatigue
- Growth impairment
- Hair loss
- High cholesterol
- Impotency
- Infertility
- Prostate problems
- Slow wound healing



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