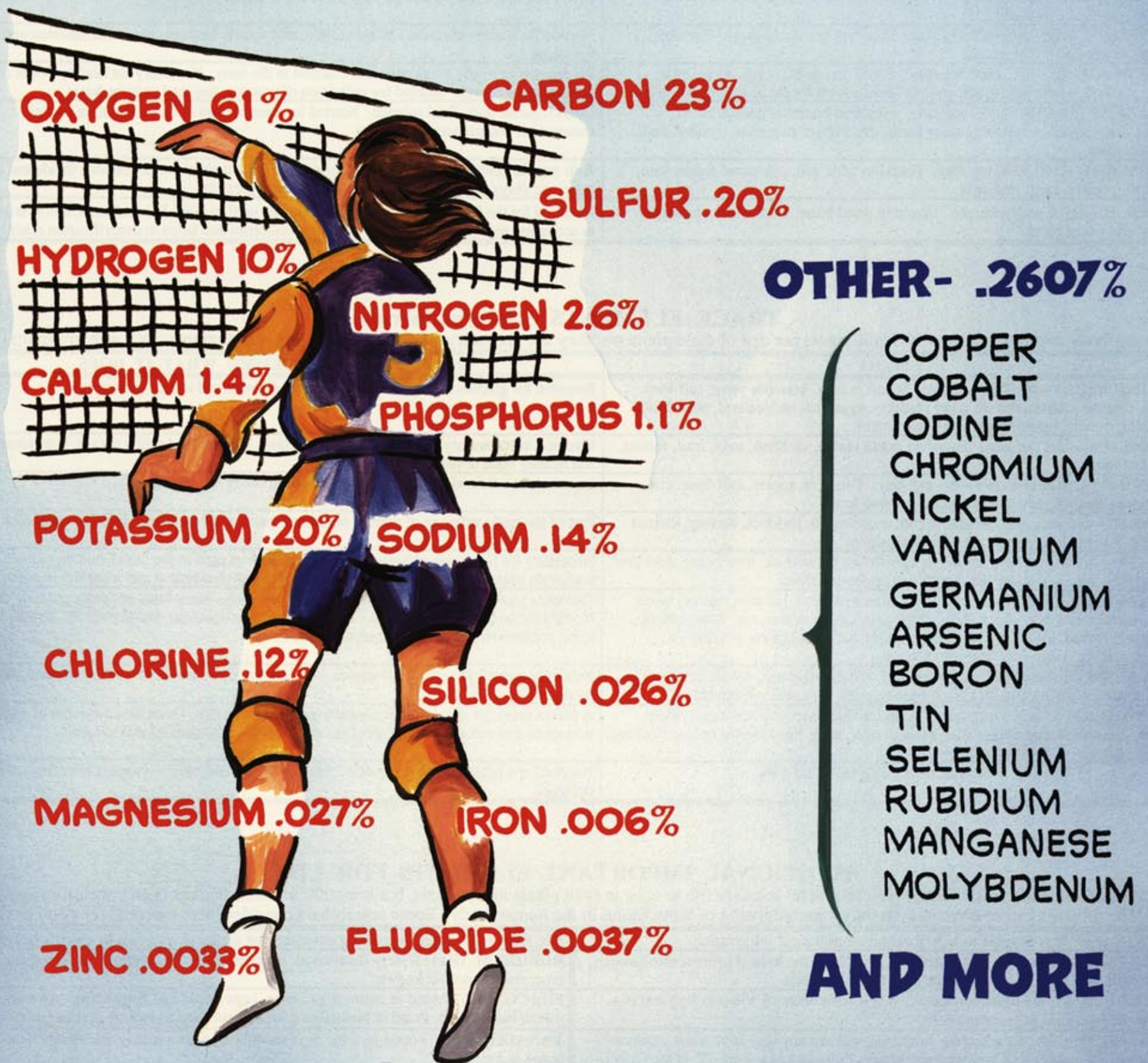


THE HUMAN BODY IS ONE OF THE MOST COMPLEX STRUCTURES IN NATURE, YET IT IS MADE UP OF THOSE SAME BASIC MINERALS AND ELEMENTS THAT ARE OUR NATURAL RESOURCES.



ELEMENTS COMPRISING THE HUMAN BODY



GOOD HEALTH DEPENDS ON SUPPLYING YOUR BODY WITH THESE NECESSARY NUTRIENTS.

EACH OF THESE ELEMENTS FULFILLS A CRITICAL FUNCTION IN YOUR LIFE. WITHOUT THEM, A HEALTHY BODY COULD NOT EXIST.

The Role of Minerals and Elements in Life Processes

For biological purposes, minerals, metals and elements are often grouped in two categories: those that are required in our diets in amounts greater than 100 milligrams per day and those that are required in amounts less than 100 milligrams daily. The term "mineral" is applied to the former group, while "trace element" is applied to the latter.

These four elements make up more than 96% of our body weight. All vitamins contain at least three (many all four) of these elements.

CARBON (C) Found in vitamins A, B, C, D, H, and K. It is an essential component of all life on Earth.	NITROGEN (N) Found in vitamins B1, B2, B6, H, and B12. Occurs in all living matter. Constitutes about 78% by volume of the universe.
HYDROGEN (H) Found in vitamins A, B, C, D, H, and K. It is the most abundant of all elements in the universe, constituting more than 90% of all atoms and about 75% of the mass of the universe.	OXYGEN (O) Found in vitamins A, B, C, D, H, and K. It is the most abundant of elements on Earth. Oxygen (O ₂) is about 21% of the air. It is combined in water and in most rocks and minerals.

MAJOR ELEMENTS (Macrominerals)

These major nutritional elements are required in our diets in amounts greater than 100 milligrams per day. The Recommended Daily Dietary Allowances (RDAs) are for adults and children over 4.

ELEMENT/ RDA/ SOURCES	ROLE IN LIFE PROCESSES/ WHAT IT DOES
CALCIUM (Ca) — 800-1200 mg./day. Found in milk, citrus fruits, green leafy vegetables, dried peas and beans, sardines (with bones), and shellfish.	Helps build strong bones and teeth, vital for nerve transmission and muscle function. Necessary for blood clotting. Helps change food into energy.
CHLORINE/CHLORIDE (Cl) —1700-5100 mg./day. Found in table salt, olives, rye flour, and seaweed.	Found in gastric juice and important to normal digestion.
MAGNESIUM (Mg) — 300-400 mg./day. Found in raw leafy green vegetables, nuts, soy beans, and whole grains.	Needed for healthy bones and blood vessels, aids muscle function, nerve transmission and energy formation.
PHOSPHORUS (P) — 800-1500 mg./day. Found in nearly all foods: cheese, eggs, meat, milk, poultry, seafood, whole grains, yogurt, including soft drinks.	Plays a role in nearly every chemical reaction in the body. Necessary for healthy bones and for production of energy. Needed for utilization of proteins, fats, and carbohydrates.
POTASSIUM (K) — 1875-5625 mg./day. Found in bananas, peanut butter, potatoes, fish, orange juice, vegetables, dairy foods, dried fruits, meat, poultry, and sunflower seeds.	Helps regulate body fluid balance. Needed for transmission of nerve impulses, muscle contraction, and proper metabolism.
SODIUM (Na) — 1100-3300 mg./day. Found in table salt, processed foods, ham, meat, fish, poultry, eggs, and milk.	Aids muscle contraction and nerve transmission, helps maintain water balance inside and outside cells, crucial in maintaining blood pressure.
SULFUR (S) — RDA undetermined. Found in dried beans, beef, clams, cabbage, peanuts, and wheat germ.	Required for the formation of certain amino acids, used to make hair and nails, and is important in activating many enzymes. Important in metabolism.

TRACE ELEMENTS (Microminerals)

While our body requires less than 100 milligrams per day of these elements, they are necessary for good health. (mg.= milligrams; mcg.= micrograms)

ELEMENT	ROLE IN LIFE PROCESSES/ WHAT IT DOES
CHROMIUM (Cr) — 50-200 mcg./day. Found in beef, brewer's yeast, calf liver, cheeses, chicken, clams, corn oil, dairy products, eggs, fish and seafood, fresh fruits, vegetables, oysters, potato skins, and whole grains.	Required for glucose metabolism. May prevent diabetes and reduce cholesterol.
COPPER (Cu) — 2-3 mg./day. Found in organ meats, shellfish, nuts, fruit, raisins, and mushrooms.	Involved in respiratory and red blood cell function. Needed for healthy nerves, taste sensitivity, and healthy bone development.
FLUORINE/FLUORIDE (F) — 1-4 mg./day. Found in apples, calf liver, cod, eggs, kidney, canned salmon and sardines, as well as tea.	Important as a fluoride in the prevention of dental decay and disease.
IODINE (I) — 150 mcg./day. Found in cod, cod-liver oil, haddock, herring, iodized salt, kelp, lobster, mushrooms, oysters, and salmon.	Part of the basic structure of thyroid hormones that control the body's rate of metabolism.
IRON (Fe) — 10-18 mg./day. Found in apricots, eggs, spinach, lima beans, lean beef, liver, poultry, whole-grain cereals, bread, and seafood/shellfish.	Necessary for formation of hemoglobin, that carries oxygen in the blood, and myoglobin, which transports oxygen to muscle tissue. Needed for energy production and a healthy immune system.
MANGANESE (Mn) — 2-5 mg./day. Found in avocados, bananas, barley, beans (dried), blackberries, bran, buckwheat, chestnuts, cloves, coffee, egg yolks, ginger, hazelnuts (filberts), legumes, liver, oatmeal, peanuts, peas, pecans, pineapples, seaweed, spinach, vegetables, and whole grains.	Promotes growth, development, and cell function. Helps many body enzymes generate energy. Needed for bone growth. Needed for protein and fat metabolism, healthy nerves, healthy blood sugar regulation, and a healthy immune system.
MOLYBDENUM (Mo) — 0.15-0.50 mg./day. Found in beans, cereal, dark-green leafy vegetables, grains, legumes, liver, kidney, milk, peas, and sweetbreads.	Promotes normal growth, development, and cell function. Forms part of the enzyme xantine oxidase.
SELENIUM (Se) — 50-200 mcg./day. Found in bran, broccoli, cabbage, celery, chicken, cucumbers, egg yolk, garlic, kidney, liver, milk, mushrooms, onions, seafood, tuna, wheat germ, and whole-grain products.	A potent protector against cardiovascular disease and cancer. Detoxifies a number of major pollutants and seems to inhibit all of the degenerative processes related to aging.
ZINC (Zn) — 15 mg./day. Found in meats, egg yolk, and milk.	Needed for a healthy immune system. Maintains taste and smell. Protects liver from chemical damage.

ADDITIONAL IMPORTANT ELEMENTS FOR LIFE

Numerous other metals and minerals play important roles for life to exist in both plants and animals, but scientific research has not been conclusive about their roles. The following trace elements are only a partial listing of those found in the human body. Some researchers consider them essential for good health.

ARSENIC (As) — It is thought to help transmit neurological information.	NICKEL (Ni) — There is growing evidence that nickel plays a role in specific enzymes.
BORON (B) — Found in fruits and vegetables. It is believed to help prevent osteoporosis, build muscle, and to be of benefit in the treatment of arthritis.	RUBIDIUM (Rb) — Widely distributed in nature. Benefits and role in biological processes are not yet known.
COBALT (Co) — Occurs in minute traces. It is a constituent of Vitamin B12 and is a factor in the formation of red blood cells.	SILICON (Si) — Found in connective tissue, bone, skin, and fingernails. Important role in metabolism, to aid in maintaining bone tissue, and to protect against atherosclerosis.
GERMANIUM (Ge) — As a healing substance, may have some immune-stimulating, anti-cancer, and anti-viral properties. Promoted as a "cure all" in the Orient.	VANADIUM (V) — Found in fish. It is thought to play a role in the metabolism of bones and teeth.

Health risks are more likely to occur from an insufficiency of minerals and trace elements than from an insufficiency of vitamins. Our vulnerability to even minute dietary imbalances in minerals can be appreciated by comparing our daily mineral intake (about 1.5 grams) with our total intake of carbohydrates, proteins and lipids (about 500 grams).

While our mineral intake represents only about 0.3 percent of our total intake of nutrients, they are so potent and so important that without them we wouldn't be able to utilize the other 99.7 percent of foodstuffs and would quickly perish.

Visit the source www.mii.org/periodic/LifeElement.html

For a more complete explanation of all the elements necessary for healthy plant and animal life processes.

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