

Table 1 - Elements of the Human Body

Element	% of Body	Functional Significance
Oxygen	65.0	A major contributor to both organic and inorganic molecules; as a gas it is necessary for the production of cellular energy
Carbon	18.5	The main component of all organic molecules, i.e.. carbohydrates, lipids, proteins, and nucleic acids
Hydrogen	10.0	Another component of all organic molecules; in its ionic form it is influential on the pH of body fluids
Nitrogen	3.0	An important structural component of all genetic material (nucleic acids)
Calcium	1.2	A building block of bones and teeth; its ionic form is essential in muscle contraction, impulse conduction in nerves, and blood clotting.
Phosphorus	1.0	Joins calcium to contribute to bone crystalline structure; present in nucleic acids and ATP
Potassium	0.4	Its ionic form is the major cation (positive ions) in cells; necessary for conduction of nerve impulses and muscle contraction
Sulfur	0.3	Important component of muscle proteins
Sodium	0.2	Ionic form is the major positive ion found outside the cell, necessary for water balance, muscle contraction, and impulse conduction
Chlorine	0.2	In ionic form is the most abundant anion (negative ion) outside the cell
Magnesium	0.1	Found in bone and plays an important assisting role in many metabolic reactions
Iodine	0.1	Required in thyroid hormones which are the body's main metabolic hormones
Iron	0.1	Basic building block of the hemoglobin molecule which is major transporter of oxygen in body

The following elements are referred to as trace elements because they are required in very minute amounts. They are, however, important elements found as part of enzymes or are required for enzyme activation.

Chromium	Promotes glucose metabolism; helps regulate blood sugar
Cobalt	Promotes normal red-blood cell formation
Copper	Promotes normal red-blood cell formation; acts as a catalyst in storage and release of iron to form hemoglobin; promotes connective tissue formation and central nervous system function
Fluorine	Prevents dental caries
Manganese	Promotes normal growth and development; promotes cell function; helps many body enzymes generate energy
Molybdenum	Promotes normal growth and development and cell function
Selenium	Complements vitamin E to act as an efficient anti-oxidant
Vanadium	Plays role in metabolism of bones and teeth
Zinc	Maintains normal taste and smell; aids wound healing; helps synthesize DNA and RNA