

Nutrient Encyclopedia Article

Nutrient

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Nutrient

All plants and animals require certain **chemicals** for growth and survival. These chemicals are called biogenic salts or nutrients (from the Latin word *nutrio* meaning to feed, rear, or nourish). They can be categorized as those needed in large amounts called macronutrients, and those needed in minute amounts called micronutrients or trace elements. Macronutrients include **nitrogen** (an essential building block of chlorophyll and protein), **phosphorus** (used to make DNA and ATP), calcium (a component of cell walls and bones), sulfur (a component of amino acids), and magnesium (a component of bones and chlorophyll). Micronutrients, although needed only in trace amounts, are still essential for survival. Examples include cobalt (used in the synthesis of vitamin B₁₂), iron (essential for **photosynthesis** and blood respiratory pigment), and sodium (used in the maintenance of proper acid-based balance called osmoregulation, nerve transmission, and several other functions). Some micronutrients, such as **copper** and zinc, can be harmful in large amounts. The borderline between necessary and excessive is often narrow and varies among **species**.