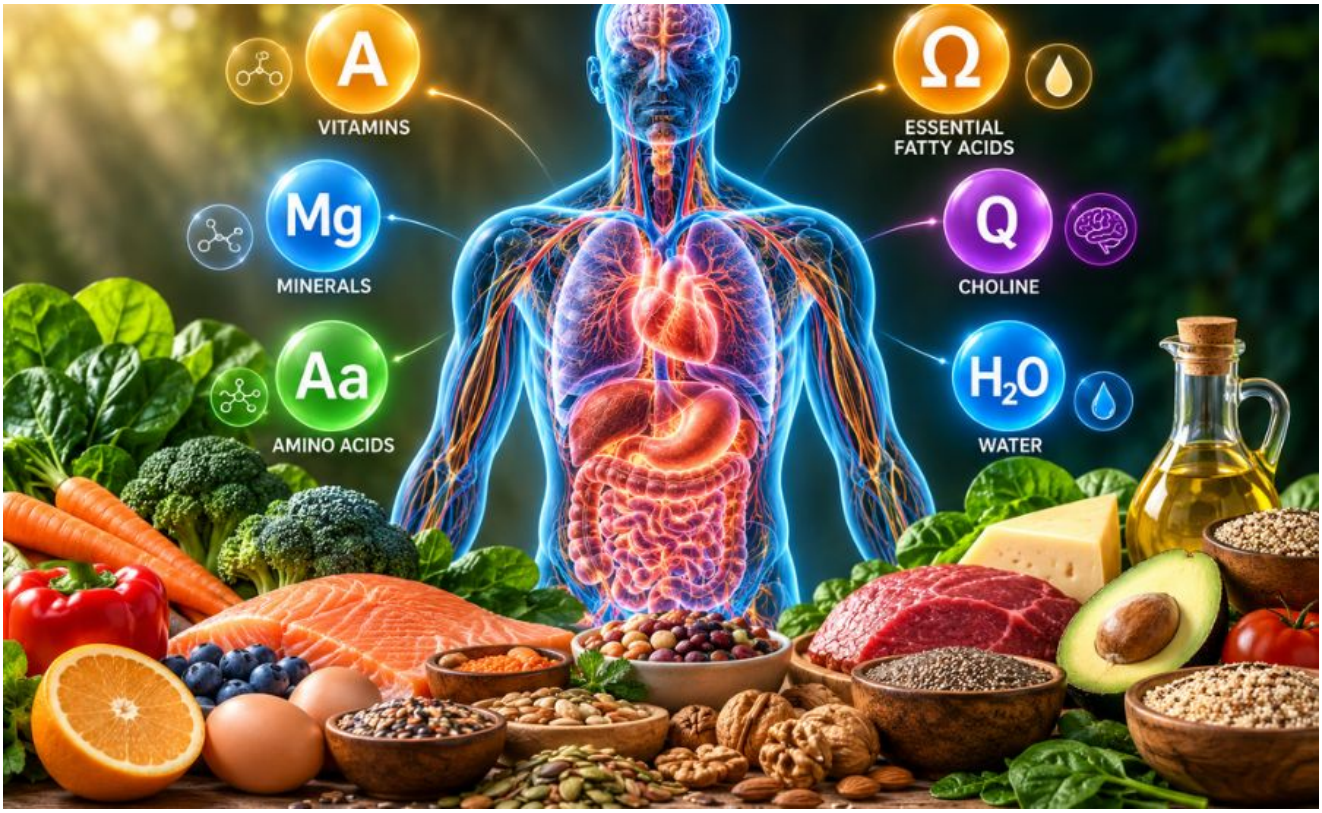
HOME

Your Body Cannot Produce These Essential Nutrients—Are You Getting Enough?

By bestfolkmedicine · 25/10/2026 · 12 min read



Your body performs millions of biological processes every day, but it cannot manufacture every nutrient it needs to survive. Scientists have identified essential vitamins, minerals, amino acids, and fatty acids that must come from your diet. The surprising question is: Are you getting enough of them?

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Your heart beats approximately 100,000 times a day. Your brain sends countless electrical signals. Your immune system constantly monitors potential threats, while your cells repair tissues, produce

energy, and maintain vital organs.

All of this happens without conscious effort.

Yet despite its extraordinary abilities, the human body has one important limitation:

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It cannot manufacture all the nutrients required to keep itself alive and functioning properly.

Some must come from the foods we eat.

And while many people focus on calories, protein, or popular supplements, the bigger nutritional picture is far more complex.

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A person can consume plenty of calories and still fall short of certain essential nutrients.

So which nutrients does your body actually need from external sources, and what happens when your diet doesn't provide enough?

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Here's what nutritional science tells us.

What Are Essential Nutrients?

An essential nutrient is a substance the body cannot produce at all, or cannot produce in sufficient quantities to meet its physiological needs.

These nutrients must therefore be obtained through food, beverages, or, in some circumstances, supplements.

Nutritional science recognizes several major categories of essential nutrients:

- Vitamins
- Minerals
- Essential amino acids
- Essential fatty acids
- Water

Carbohydrates, proteins, and fats are also major nutritional categories, but their essentiality requires a more precise distinction. For example, protein supplies indispensable amino acids, while not every type of dietary fat or carbohydrate is individually essential.

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The body is capable of producing certain nutrients under specific conditions. Vitamin D, for example, can be synthesized in the skin through exposure to ultraviolet B radiation.

However, production may be insufficient depending on sunlight exposure, age, skin pigmentation, health conditions, and other factors.

The key is understanding which nutrients must come from your diet and which ones your body can produce under the right conditions.

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1. The 13 Essential Vitamins Your Body Needs

Vitamins are organic compounds required in relatively small quantities for normal metabolism, growth, immunity, and cellular maintenance.

Scientists recognize **13 essential vitamins**.

Fat-Soluble Vitamins

These vitamins are absorbed alongside dietary fats and can be stored in body tissues.

Vitamin A

Supports normal vision, immune function, skin health, and cellular development.

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Food sources: Carrots, sweet potatoes, spinach, eggs, and liver.

Vitamin D

Supports calcium absorption, bone health, and normal muscle and immune function.

Food sources: Fatty fish, egg yolks, and fortified foods. The body can also produce vitamin D through sunlight exposure.

Vitamin E

Acts as an antioxidant that helps protect cells from oxidative damage.

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Food sources: Almonds, sunflower seeds, wheat germ, and vegetable oils.

Vitamin K

Plays a critical role in normal blood clotting and contributes to bone metabolism.

Food sources: Kale, spinach, broccoli, and other leafy green vegetables.

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Water-Soluble Vitamins

These include vitamin C and the eight recognized B vitamins.

Vitamin C: Essential for collagen synthesis, wound healing, antioxidant protection, and normal immune function.

Sources: Citrus fruits, kiwi, strawberries, bell peppers, and broccoli.

Vitamin B1 (Thiamine): Helps convert food into usable energy and supports nervous system function.

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Vitamin B2 (Riboflavin): Supports cellular energy production and normal tissue function.

Vitamin B3 (Niacin): Participates in hundreds of metabolic reactions.

Vitamin B5 (Pantothenic Acid): Required to produce coenzyme A, an important molecule involved in metabolism.

Vitamin B6: Supports amino acid metabolism, neurotransmitter production, and red blood cell function.

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Vitamin B7 (Biotin): Helps metabolize carbohydrates, fats, and proteins.

Vitamin B9 (Folate): Essential for DNA synthesis, cell division, and healthy fetal development.

Vitamin B12: Required for nerve function, DNA synthesis, and healthy red blood cells.

B vitamins are found in a variety of foods, including whole grains, beans, eggs, dairy, meat, fish, nuts, and leafy vegetables.

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Vitamin B12 deserves special attention because reliable natural food sources are primarily animal-derived. People following vegan diets generally need fortified foods or B12 supplementation.

2. Essential Minerals: Small Amounts, Enormous Responsibilities

Minerals are inorganic elements involved in many fundamental biological processes.

They help regulate fluid balance, transmit nerve signals, support muscle contraction, maintain bones, and enable enzymes to function.

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Although some popular wellness claims suggest that humans require 60 essential minerals, this number is not supported by established nutritional science.

Approximately 15–16 minerals are commonly discussed as essential or nutritionally important, depending on how specific elements are classified.

Major Minerals

These are required in relatively larger amounts.

Calcium: Supports bones, teeth, muscle contraction, and nerve signaling.

Phosphorus: Important for bones, DNA, cell membranes, and energy metabolism.

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Magnesium: Participates in hundreds of enzyme reactions, including those involved in energy production and normal muscle and nerve function.

Sodium: Helps regulate fluid balance and nerve impulses.

Potassium: Essential for normal muscle function, electrical signaling, and cardiovascular regulation.

Chloride: Supports fluid balance and stomach acid production.

Sulfur: A component of sulfur-containing amino acids and numerous biological compounds. Its requirements are generally met through adequate dietary protein.

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Trace Minerals

These are needed in smaller amounts but remain biologically important.

Iron: Required for oxygen transport through hemoglobin.

Zinc: Supports immune function, wound healing, DNA synthesis, and growth.

Iodine: Essential for thyroid hormone production.

Selenium: Contributes to antioxidant defense and thyroid hormone metabolism.

Copper: Supports iron metabolism, connective tissue formation, and enzyme activity.

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Manganese: Participates in metabolism and antioxidant enzyme systems.

Molybdenum: Required for several enzymes involved in metabolic reactions.

Chromium: Has historically been classified as essential, although its essentiality in humans is now debated.

Fluoride: Can strengthen tooth enamel and reduce tooth decay, but it is not universally classified as essential for normal human growth and survival.

Important: Not every naturally occurring element is an essential nutrient. The presence of a mineral in soil, water, or supplements does not establish that the human body requires it.

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3. The 9 Essential Amino Acids Your Body Cannot Make

Protein is often associated with muscle growth, but its importance extends far beyond the gym.

Your body uses amino acids to produce enzymes, hormones, antibodies, structural proteins, and countless molecules necessary for life.

While the body can manufacture some amino acids, nine are considered essential for humans.

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These are:

1. **Histidine:** Supports growth, tissue maintenance, and production of histamine.
2. **Isoleucine:** Involved in muscle metabolism and energy regulation.
3. **Leucine:** Helps stimulate muscle protein synthesis.
4. **Lysine:** Supports protein synthesis and connective tissue maintenance.
5. **Methionine:** Important for methylation reactions and the production of sulfur-containing compounds.
6. **Phenylalanine:** A precursor of tyrosine and several important signaling molecules.
7. **Threonine:** Supports structural proteins and normal tissue function.
8. **Tryptophan:** A precursor of serotonin, melatonin, and niacin.
9. **Valine:** Involved in muscle metabolism and tissue maintenance.

Where Can You Get Them?

Good sources include:

- Eggs
- Fish and poultry
- Meat
- Dairy products
- Soybeans and tofu
- Quinoa

- Beans and lentils
- Nuts and seeds

Animal proteins generally provide all nine essential amino acids in favorable proportions.

Plant-based diets can also supply all essential amino acids when they provide sufficient protein from a variety of foods.

And contrary to a common myth, plant proteins do not necessarily need to be combined in one meal. Meeting amino acid requirements over the course of the day is what matters.

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4. The 2 Essential Fatty Acids Your Body Must Obtain From Food

Fat is not simply stored energy.

Certain fatty acids are necessary for cell membranes, normal growth, and the production of signaling molecules.

However, the human body cannot synthesize two particular fatty acids.

Alpha-Linolenic Acid (ALA)

ALA is an essential omega-3 fatty acid.

Food sources include:

- Flaxseeds
- Chia seeds
- Walnuts
- Canola oil
- Soybeans

The body can convert some ALA into the longer-chain omega-3 fatty acids EPA and DHA, although conversion is often limited.

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EPA and DHA are found primarily in fatty fish and algae-derived products.

Linoleic Acid (LA)

Linoleic acid is an essential omega-6 fatty acid.

Food sources include:

- Sunflower seeds
- Walnuts
- Soybean oil
- Safflower oil
- Other nuts and seeds

Both omega-3 and omega-6 fatty acids are necessary for normal physiology.

Despite popular claims, omega-6 fatty acids are not inherently harmful or automatically inflammatory.

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The goal is to obtain adequate amounts of essential fats as part of an overall balanced dietary pattern.

5. Choline: The Essential Nutrient Many People Forget

Choline is another important nutrient that often receives less attention than vitamins and minerals.

It supports:

- Cell membrane structure
- Normal liver function
- Acetylcholine production, important for nerve signaling
- Methylation reactions
- Healthy fetal brain and nervous system development

The liver produces some choline, but generally not enough to satisfy the body's requirements.

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Therefore, dietary choline is important.

Best Food Sources

Egg yolks, liver, fish, soybeans, beans, and certain vegetables provide choline.

Requirements vary by age, sex, and pregnancy or breastfeeding status.

An inadequate intake can contribute to liver and muscle problems, although low dietary intake does not automatically mean a person has a clinical deficiency.

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6. Water: The Most Overlooked Essential Nutrient

Water rarely appears in viral lists of vitamins and minerals, yet it is indispensable.

Every cell depends on water to maintain normal function.

It helps:

- Regulate body temperature
- Transport nutrients and metabolic waste
- Maintain blood volume
- Lubricate joints
- Support digestion
- Facilitate normal kidney function

The body also produces small amounts of metabolic water, but not enough to meet its total needs.

Water must come from beverages and foods.

Daily fluid requirements vary with body size, physical activity, climate, health status, and diet.

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There is no single amount that is ideal for everyone.

7. Can You Eat Enough Calories but Still Lack Essential Nutrients?

Absolutely.

A person may consume enough calories to maintain or gain weight while falling short of certain vitamins and minerals.

This is sometimes described as *hidden hunger*—a form of micronutrient inadequacy that may not be immediately obvious.

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Diets dominated by highly refined, nutrient-poor foods can contribute to this problem.

However, even people who believe they eat healthfully may have particular nutritional gaps.

Potential risk factors include:

- Highly restrictive diets
- Poor food variety
- Malabsorption disorders
- Certain medications
- Pregnancy and breastfeeding
- Older age
- Limited access to nutritious foods
- Increased requirements during particular life stages

For example, people with celiac disease may experience deficiencies related to intestinal malabsorption, especially before effective treatment.

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People following vegan diets must also pay particular attention to vitamin B12.

The most important point is that nutritional adequacy depends on the quality, quantity, and variety of foods—not simply the number of calories consumed.

8. Warning Signs You May Not Be Getting Enough Nutrients

Nutrient deficiencies can produce a wide range of symptoms, depending on which nutrient is lacking and how severe the deficiency becomes.

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Possible signs include:

Persistent fatigue: Can occur with iron, vitamin B12, or folate deficiency, among many other causes.

Muscle weakness or cramps: May sometimes involve disturbances in electrolytes or other nutritional factors.

Tingling or numbness: Can occur with vitamin B12 deficiency, although neurological conditions and other medical problems can cause similar symptoms.

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Frequent mouth sores: Sometimes associated with deficiencies involving iron, folate, or vitamin B12.

Unexplained bruising or bleeding: May be associated with certain vitamin deficiencies but can also indicate serious medical conditions.

Poor wound healing: Can occur with inadequate protein, vitamin C, zinc, or other nutritional problems.

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Bone pain or weakness: May occur with significant vitamin D deficiency and disturbances in calcium metabolism.

However, these symptoms are not specific enough to diagnose a nutrient deficiency without proper medical assessment.

Blood testing and a review of diet, medical history, and medications may be necessary.

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9. Do You Really Need Nutritional Supplements?

Not necessarily.

Many people can meet most nutritional requirements through a varied diet containing nutrient-dense foods.

A balanced eating pattern may include:

- Vegetables and fruits
- Legumes
- Whole grains
- Nuts and seeds
- Eggs or dairy products, when appropriate
- Fish, meat, or suitable plant-based alternatives
- Healthy dietary fat sources

However, supplements can be important for certain individuals.

Examples include vitamin B12 for people following vegan diets, folic acid around conception and early pregnancy, and vitamin D for people at risk of inadequate status.

Other supplements may be recommended when a confirmed deficiency or specific medical condition is present.

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More is not always better.

Excessive supplementation can cause adverse effects.

High doses of vitamin A, selenium, iodine, iron, vitamin B6, and other nutrients may be harmful.

In some cases, consuming large amounts of one nutrient can interfere with the absorption or metabolism of another.

Supplements should address a genuine nutritional need rather than follow the assumption that every nutrient must be taken in large quantities.

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10. The Simplest Way to Cover Your Nutritional Needs

You don’t need to memorize every vitamin, mineral, amino acid, and fatty acid to build a nutritious diet.

Instead, focus on dietary variety and consistency.

A practical daily approach includes:

Eat colorful vegetables and fruits. Different plant foods provide different combinations of vitamins, minerals, fiber, and phytochemicals.

Include sufficient protein. Protein-rich foods help supply the essential amino acids needed for tissue maintenance and repair.

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Choose healthy fat sources. Nuts, seeds, and appropriate oils can contribute essential fatty acids.

Include mineral-rich foods. Legumes, leafy greens, dairy or fortified alternatives, nuts, and whole grains provide different essential minerals.

Pay attention to nutrients that may be difficult to obtain. Vitamin B12, vitamin D, iron, calcium, iodine, and choline may deserve additional consideration depending on your diet and circumstances.

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Avoid unnecessary megadoses. More supplements do not automatically produce better health.

And most importantly, consider your individual nutritional needs rather than following universal supplement claims.

Final Thoughts: Your Body Is Remarkable, but It Needs the Right Building Blocks

The human body can perform astonishing biological functions.

It repairs damaged tissue, creates millions of new cells, regulates hormones, and maintains complex systems that keep us alive.

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Yet it depends on a steady supply of essential nutrients to perform these functions properly.

Nutritional science recognizes 13 essential vitamins, nine essential amino acids, two essential fatty acids, and a range of essential minerals, alongside other indispensable nutrients such as choline and water.

Some substances are strictly diet-dependent, while others can be synthesized in limited amounts or under particular conditions.

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There is no scientifically established requirement for the widely circulated claim that everyone needs exactly 90 essential nutrients.

What matters is not chasing an impressive number.

What matters is providing your body with the nutrients it actually needs, in appropriate amounts, from reliable sources.

And the good news?

For many people, the foundation of good nutrition is simpler than supplement marketing makes it seem: a balanced, varied diet built around nourishing whole foods.

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Are you confident your diet provides all the nutrients your body needs, or do you think you might be missing some? Share your thoughts in the comments!

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