

Your Guide to Vitamins: The Building Blocks of Good Health

(Patient Education Material by Alcardia Life Sciences Pvt. Ltd.)

What Are Vitamins and Why Are They Important?

Vitamins are essential nutrients your body needs in small amounts to function properly. They help in:

- Growth and development
- Building immunity
- Energy production
- Healthy eyes, skin, bones, and nerves
- Preventing various diseases

Your body cannot make most vitamins on its own — they must come from **food or supplements**.

FAT-SOLUBLE VITAMINS

(Stored in body fat and used when needed)

Vitamin A (Retinol, Beta-Carotene)

Sources: Carrots, sweet potatoes, spinach, pumpkin, liver, milk, butter, egg yolk.

Need: For healthy eyes, skin, and immune system.

Mode of Action: Helps form visual pigments in the retina and supports cell growth.

Benefits: Improves night vision, boosts immunity, promotes healthy skin.

Deficiency Diseases: Night blindness, dry eyes, poor immunity, dry skin.

Prevention: Eat colorful fruits and vegetables (especially orange & green).

Medical Forms: Capsules, syrups, softgels, injections (retinol or beta-carotene).

Diet Tip: Take with a small amount of fat or oil for better absorption.

Vitamin D (Calciferol)

Sources: Sunlight, fish (salmon, sardine), egg yolk, milk, fortified foods.

Need: For calcium absorption and strong bones.

Mode of Action: Regulates calcium and phosphorus balance in the blood.

Benefits: Strengthens bones, prevents rickets and osteoporosis, supports immunity.

Deficiency Diseases: Rickets (children), Osteomalacia (adults), bone pain, fatigue.

Prevention: 15–20 minutes of sunlight daily + Vitamin D-rich diet.

Medical Forms: Tablets, capsules, sachets (D3 60000 IU), injections.

Diet Tip: Take with meals containing fat or oil for better absorption.

Vitamin E (Tocopherol)

Sources: Nuts, seeds, wheat germ, vegetable oils, spinach, avocado.

Need: Acts as a powerful antioxidant protecting cells from damage.

Mode of Action: Neutralizes harmful free radicals.

Benefits: Improves skin, fertility, heart health, and immunity.

Deficiency Diseases: Muscle weakness, nerve damage, poor wound healing.

Prevention: Include nuts, seeds, and green veggies daily.

Medical Forms: Capsules, creams, softgels.

Diet Tip: Take after meals; avoid overuse in blood-thinning therapy.

Vitamin K

Sources: Green leafy vegetables, broccoli, cabbage, eggs, liver.

Need: Essential for blood clotting and bone health.

Mode of Action: Helps produce proteins required for coagulation.

Benefits: Prevents excessive bleeding, supports bone mineralization.

Deficiency Diseases: Bleeding tendency, easy bruising, weak bones.

Prevention: Eat greens daily; maintain gut health (as gut bacteria make some K).

Medical Forms: Tablets, injections (especially in newborns).

Diet Tip: Eat fresh green vegetables regularly.

WATER-SOLUBLE VITAMINS

(Not stored in the body — need daily intake)

Vitamin C (Ascorbic Acid)

Sources: Citrus fruits, amla, guava, kiwi, bell pepper, tomatoes, green leafy vegetables.

Need: Builds immunity, collagen formation, and improves iron absorption.

Mode of Action: Acts as an antioxidant and helps tissue repair.

Benefits: Boosts immunity, skin glow, wound healing, reduces fatigue.

Deficiency Diseases: Scurvy (bleeding gums, weakness).

Prevention: Take fresh fruits and vegetables daily.

Medical Forms: Tablets, effervescent tablets, chewables, sachets.

Diet Tip: Take after meals; avoid overcooking vegetables.

B-COMPLEX VITAMINS

Vitamin B1 (Thiamine)

Sources: Whole grains, pulses, nuts, meat, eggs.

Need: For energy metabolism and nerve function.

Deficiency: Beriberi (nerve and heart problems).

Benefits: Improves nerve health, appetite, and heart function.

Medical Forms: Tablets, injections, B-complex syrups.

Vitamin B2 (Riboflavin)

Sources: Milk, eggs, almonds, spinach, cereals.

Need: For energy and healthy skin and eyes.

Deficiency: Cracked lips, sore tongue, eye irritation.

Benefits: Improves skin tone, supports metabolism.

Vitamin B3 (Niacin)

Sources: Meat, fish, peanuts, whole grains.

Need: For energy production and skin health.

Deficiency: Pellagra (diarrhea, dermatitis, dementia).

Benefits: Lowers cholesterol, supports brain function.

Vitamin B4 (Choline / Adenine-related group)

Sources: Eggs, liver, fish, peanuts, soybeans.

Need: For brain and liver function.

Deficiency: Fatty liver, memory issues.

Benefits: Supports brain development and fat metabolism.

Vitamin B5 (Pantothenic Acid)

Sources: Chicken, eggs, whole grains, legumes.

Need: For hormone and energy synthesis.

Deficiency: Fatigue, numbness, digestive issues.

Benefits: Improves metabolism, reduces stress.

Vitamin B6 (Pyridoxine)

Sources: Bananas, fish, potatoes, chickpeas.

Need: For protein metabolism and nerve health.

Deficiency: Anemia, irritability, skin rashes.

Benefits: Reduces PMS symptoms, improves mood, supports brain function.

Vitamin B12 (Cobalamin)

Sources: Meat, fish, eggs, dairy (absent in plant food).

Need: For red blood cell formation and nerve function.

Deficiency: Anemia, fatigue, numbness, memory issues.

Benefits: Boosts energy, improves concentration, prevents neuropathy.

Medical Forms: Tablets, injections, sublingual tablets.

Diet Tip: Vegetarians should take fortified foods or supplements.

Folic Acid (Vitamin B9)

Sources: Green leafy vegetables, citrus fruits, beans, fortified cereals.

Need: For cell division, red blood cells, and fetal brain development.

Deficiency: Anemia, birth defects in pregnancy.

Benefits: Essential in pregnancy, for blood formation and heart health.

Medical Forms: Tablets, B-complex syrups, prenatal supplements.

When and How to Take Vitamins

- **Morning after breakfast:** Best time for most multivitamins.
 - **With meals:** Fat-soluble vitamins (A, D, E, K) for better absorption.
 - **Empty stomach:** Vitamin C and B-complex can be taken anytime, preferably with water.
 - **Avoid overdose:** Follow doctor's advice; excess vitamins can be harmful.
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General Preventive Benefits of Vitamins

- ✓ Strengthen immunity
 - ✓ Protect against infections
 - ✓ Promote healthy skin, hair, and nails
 - ✓ Support strong bones and joints
 - ✓ Improve energy and mood
 - ✓ Enhance memory and brain function
 - ✓ Prevent chronic diseases like heart disease and osteoporosis
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Balanced Diet for Daily Vitamin Needs

Include:

- Fruits & vegetables (colorful variety)
 - Whole grains, legumes
 - Milk, eggs, fish, nuts, seeds
 - Healthy fats (olive oil, mustard oil)
 - Sufficient water and sunlight
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When to Consult Your Doctor

- Persistent fatigue or weakness
 - Hair loss, skin changes, poor healing
 - Numbness, tingling, or muscle pain
 - During pregnancy or chronic illness
 - Before starting any supplements
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When and How to Take Vitamins

Timing	Best For	Tip
Morning after breakfast	Multivitamins, B-complex	Gives all-day energy
With meals	Fat-soluble vitamins (A, D, E, K)	Improves absorption
Anytime with water	Vitamin C	Refreshing and safe daily
Doctor's advice only	Supplements	Avoid overdose or self-medication

Recommended Dietary Allowances (RDA) for Vitamins

Vitamin	Common Name	RDA (Adults)	Main Natural Sources	Key Functions / Benefits
Vitamin A	Retinol / Beta-Carotene	600–900 µg/day	Carrots, spinach, pumpkin, liver, milk, eggs	Healthy vision, skin, and immunity
Vitamin D	Calciferol	600–800 IU/day (15–20 µg)	Sunlight, fish, egg yolk, fortified milk	Calcium absorption, bone health
Vitamin E	Tocopherol	8–10 mg/day	Nuts, seeds, vegetable oils, spinach	Antioxidant, heart and skin health
Vitamin K	Phylloquinone / Menaquinone	90–120 µg/day	Green leafy vegetables, cabbage, eggs	Blood clotting, bone strength
Vitamin C	Ascorbic Acid	65–90 mg/day	Citrus fruits, amla, guava, tomatoes	Immunity, collagen, wound healing
Vitamin B1	Thiamine	1.1–1.2 mg/day	Whole grains, pulses, nuts, eggs	Energy metabolism, nerve function
Vitamin B2	Riboflavin	1.1–1.3 mg/day	Milk, eggs, almonds, spinach	Skin and eye health, metabolism
Vitamin B3	Niacin	14–16 mg/day	Meat, fish, peanuts, grains	Energy, skin, and brain health
Vitamin B4	Choline	425–550 mg/day	Eggs, liver, fish, soybeans	Brain and liver health
Vitamin B5	Pantothenic Acid	5 mg/day	Chicken, eggs, whole grains, legumes	Hormone synthesis, stress relief
Vitamin B6	Pyridoxine	1.3–1.7 mg/day	Bananas, fish, potatoes, chickpeas	Brain function, mood balance
Vitamin B7	Biotin	30 µg/day	Eggs, nuts, seeds, sweet potato	Hair, skin, nail health, energy use
Vitamin B9	Folic Acid	400 µg/day (600 µg in pregnancy)	Leafy vegetables, beans, citrus fruits	Red blood cells, pregnancy support

Vitamin	Common Name	RDA (Adults)	Main Natural Sources	Key Functions / Benefits
Vitamin B12	Cobalamin	2.4 µg/day	Meat, fish, dairy, fortified cereals	Red blood cells, nerve health

Healthy Tip from Alcardia Life Sciences:

A balanced diet is your best medicine. Supplements fill the gap — but food should always come first.
