

Basics of Nutrition

Basics of Nutrition – Quick Reference Notes

1. What Is Nutrition?

- **Definition:** The process by which living organisms obtain, assimilate, and use food substances for growth, maintenance, and repair.
 - **Purpose:** Supplies energy, builds and repairs tissues, regulates body processes, and supports overall health.
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2. Major Nutrient Categories

Category	Primary Function	Key Sources
Carbohydrates	• Main energy source (4?kcal/g) • Spare protein for growth/repair	Grains, fruits, vegetables, legumes, sugars
Proteins	• Build/repair tissues (muscle, enzymes, hormones) • Provide 4?kcal/g • Supply essential amino acids	Meat, fish, eggs, dairy, beans, nuts, soy
Fats (Lipids)	• Concentrated energy (9?kcal/g) • Cell?membrane structure • Absorb fat?soluble vitamins (A, D, E, K)	Oils, butter, nuts, seeds, avocados, fatty fish
Vitamins	• Regulate metabolism, immunity, vision, blood clotting, etc.	Fruits, vegetables, dairy, fortified foods
Minerals	• Bone health, nerve transmission, fluid balance, enzyme function	Dairy, meat, whole grains, leafy greens, nuts
Water	• Solvent for biochemical reactions • Temperature regulation • Transport of nutrients & waste	Drinking water, soups, fruits, vegetables

3. Energy Balance

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- **Caloric Intake vs. Expenditure**
 - *Positive balance* ? weight gain.
 - *Negative balance* ? weight loss.
 - *Equilibrium* ? weight maintenance.
 - **Basal Metabolic Rate (BMR):** Energy needed at rest.
 - **Physical Activity Level (PAL):** Adjusts total energy needs.
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4. Recommended Daily Intakes (Adults, General Guidelines)

Nutrient	Approx. Daily Amount*
Calories	2,000–2,500?kcal (varies by sex, age, activity)
Carbohydrates	45–65?% of total kcal (? 225–325?g)
Protein	0.8?g/kg body weight (? 46?g?women, 56?g?men)
Fat	20–35?% of total kcal (? 44–78?g)
Fiber	25?g?women, 38?g?men
Water	2.7?L?women, 3.7?L?men (all fluids)
Vitamins & Minerals Based on RDA/AI values (e.g., Vitamin?C?90?mg, Calcium?1,000?mg)	

*Values are averages; individual needs may differ.

5. Macronutrient Quality

Carbohydrates	Protein	Fat
Complex (starches, fiber) ? slower glucose rise	Complete (all essential amino acids) ? animal sources; combine plant foods for completeness	Unsaturated (mono? & poly? unsaturated) ? heart?healthy; limit saturated & trans fats
Simple (sugars) ? quick energy, watch excess	Incomplete ? missing one or more essential amino acids (most plant proteins)	**