

Introduction to Sports Nutrition

Introduction to Sports Nutrition

Key concepts, practical guidelines, and why it matters for athletes of all levels.

1. Why Nutrition Matters in Sport

Aspect	What It Does	Impact on Performance
Energy Supply	Provides fuel (carbohydrates, fats, protein) for muscle work	Determines endurance, speed, strength
Recovery	Replenishes glycogen, repairs muscle tissue	Faster post-exercise repair, reduced soreness
Body Composition	Influences lean mass vs. fat mass	Improves power-to-weight ratio, agility
Immune Function	Supplies micronutrients and antioxidants	Lowers risk of illness and training interruptions
Hydration	Maintains fluid balance & electrolyte levels	Preserves cardiovascular function, prevents cramps

2. Macronutrients Overview

Nutrient	Primary Role	Typical Daily Recommendation (for active adults)
Carbohydrates	Main source of rapid energy; replenishes muscle glycogen	5–7g/?kg body weight (moderate training) 7–10g/?kg (high-intensity or endurance)
Protein	Builds/repairs muscle; supports enzymes & hormones	1.2–2.0g/?kg body weight (depends on sport & training volume)
Fats	Secondary energy source; essential for hormone production & vitamin absorption	0.8–1.2g/?kg (?20–35% of total calories)

Practical Tips

Introduction to Sports Nutrition

- **Carb timing:** 1–4?g/kg 3–4?h before activity; 0.5–0.7?g/kg every 15–30?min during prolonged sessions.
 - **Protein distribution:** 20–30?g of high?quality protein every 3–4?h; include 20–40?g within 30?min–2?h post?exercise.
 - **Fat quality:** Favor unsaturated fats (olive oil, nuts, fatty fish); limit saturated & trans fats.
-

3. Micronutrients & Hydration

3.1 Key Vitamins & Minerals

Nutrient	Why It's Important	Food Sources
Iron	Oxygen transport; prevents fatigue	Red meat, legumes, fortified cereals
Calcium & Vitamin?D	Bone health, muscle contraction	Dairy, fortified plant milks, sunlight
B?Vitamins	Energy metabolism	Whole grains, leafy greens, meat
Magnesium	Muscle relaxation, electrolyte balance	Nuts, seeds, whole grains
Antioxidants (Vit?C, Vit?E, Selenium)	Counteract oxidative stress	Berries, citrus, nuts, seeds

3.2 Hydration Basics

Situation	Fluid Goal	Example Beverage
Pre?exercise (2–3?h before)	500?ml water or sport drink	Plain water, diluted electrolyte solution
During exercise (?1?h)	150–250?ml every 15–20?min	Water or 6?% carbohydrate electrolyte drink
Long >1?h	300–600?ml/h, include carbs & electrolytes	6–8?% carbohydrate sport drink
Post?exercise	Replace 150?% of fluid loss (weigh before/after)	Water