

Key Considerations for Nutrition and Physical Activity

Regardless of the sport (power, team, endurance), the biggest nutritional issues revolve around optimally satisfying *energy* needs, *fluid* needs, and *vitamin and mineral* needs quantitatively, qualitatively, and at the right time. The human system works in real time and does not wait to the end of the day to determine the appropriate endocrine response to energy and nutrient consumption. It's important to ask: How much do I need, and when?

Nutritional Changes Caused by Physical Activity

- *Altered energy requirements.* The more activity, the more energy is required.
- *Altered energy substrate requirements.* Depending on the activity, different relative amounts of carbohydrate, protein, and fat are needed.
- *Altered vitamin requirements.* Energy substrate metabolism is vitamin dependent. For example, the greater the energy metabolized, the greater the B vitamins needed.
- *Altered mineral requirements.* Exercise-associated oxygen requirements and blood expansion increases the need for iron and increased skeletal strength requirements increases the need for calcium.
- *Increased body fluid loss.* The increase in sweat production increases the need for fluid replacement.

Conditions Affecting Nutritional Status

- Inadequate intake of energy, micronutrients, and fluids
- Inadequate absorption of energy, nutrients, and fluids
- Defective utilization of energy, nutrients, and fluids
- Increased excretion of consumed foods and fluids
- Increased requirements based on age, gender, or condition (injury, growth, pregnancy, etc.)

Major Contributing Factors to Poor Nutrition in Athletes

Organizational Barriers

- Bad rules inhibit easy availability of appropriate foods and beverages
- Purveyors advertise unnecessary or harmful supplements
- Lack of nutrition experts to educate athletes, with bad advice given by others

Lack of Knowledge

- Inappropriate modeling (i.e., copying admired athletes)
- Thinking of nutrition as a belief system and not a science
- Perceived benefit (consuming certain foods may help, but not for the reasons they believe)
- Oversimplifying “good” and “bad” foods
- Magic bullet (looking for the easy fix)

Bad Traditions

- Perpetuation of coach- or sport-induced nutrition-related problems
- Inappropriate weight focus (the focus should be on body composition and strength-to-weight ratio)
- Commonly held misconception that high protein intake will resolve all problems
- Overreliance on supplements lowers food intake and creates WADA issues

Food Restrictions

- Allergies: Avoidance of foods that cause a potentially life-threatening allergic response
- Intolerances: Avoidance of foods that cause discomfort from insufficient digestive enzyme
- Sensitivities: Avoidance of foods that cause gastrointestinal inflammation, discomfort, and bloating
- Restrictive weight-loss diets: A thinner athlete is not the same as a leaner athlete

Misinterpretation of Dietary Guidelines

- Sugar-containing sports beverages are appropriate for consumption during bouts of physical activity
- Sodium losses through sweat may exceed intake recommendations, but should be fully replaced
- The DRI/RDA value for athletes is two standard deviations *above* the average requirement