

healthy athlete's nutrition

introduction

objective: summarize guidelines for sports nutrition to assist sport physicians in clinical practice.

method: comprehensive literature review using pubmed.

critical role of nutrition in athletes

nutrition's impact on performance:

supports intensive training and promotes recovery.

influences adaptations in muscle and tissues.

high-cho diets may reverse increased fat-burning ability of muscles.

performance's impact on nutrition:

endurance training increases oxidative capacity, requiring more oxygen.

integration of anaerobic and aerobic energy supplies varies by exercise duration.

nutrition and performance influence on body composition and gene expression

gene expression: modulated by nutrients, metabolism, and hormones.

protein intake: post-training protein intake can stimulate synthesis for up to 24 hours.

precision medicine in athlete nutrition

physical assessment: important tools include anthropometric measures and instrumental techniques (e.g., dxa, cat, nmr, bioimpedentiometry).

nutritional assessment: routine in many sports organizations, involving dietary intake analysis and physical examinations.

energy requirements of athletes

daily energy needs:

adequate energy for daily living, sport, muscle repair, and growth.

females need additional energy for menstruation; younger athletes for growth.

macronutrient distribution:

cho: 55-60%

fat: 25-30%

protein: 15-20%

weight changes in athletes

influences: genetics, environment, training, and diet.

energy balance: maintained through proper diet and exercise.

guidelines for safe weight loss in athletes

target rate: 0.5-1 kg/week.

caloric deficit: 500-1000 kcal/day through diet and exercise.

macronutrient focus: adequate cho for training needs and protein to prevent lbn loss.

special diets and athletes

intermittent fasting: normal eating and fasting cycles.

zone diet: 40% cho, 30% protein, 30% fat.

atkins diet: low-cho, high-protein/fat.

paleo diet: avoids grains, dairy, legumes; focuses on lean meats, fish, non-starchy fruits, and vegetables.

preparation for competition

pre-event nutrition: high-cho intake (7-10g/kg body mass).

hydration: 5-7 ml fluid/kg body mass 4 hours before exercise; additional 3-5 ml/kg if urine is dark.

pre-exercise meal: cho-rich, low-fat, low-fiber, moderate protein.

nutritional strategies for recovery

goals: restore body changes and promote adaptations post-exercise.

cho intake: high-cho intake post-exercise to replenish glycogen stores.

protein intake: 20-25 g protein for muscle synthesis.

conclusion

nutrition plays a crucial role in enhancing sports performance and recovery. proper management can significantly benefit athletes without health risks.