

IDEA #234

Fueling for Performance: Nutrition Programming for Every Sport

Thursday, July 21st, 2022

8:40-10:30am

Jacqueline Kaminski MS, RDN/LDN, NASM Master Nutrition Instructor

Quick review of the basics: Metabolism & Energy Systems

- Carbohydrates
 - most common sources (foods)
 - breakdown of carbohydrates (glycolysis)
 - oxidation of carbohydrates for energy (krebs cycle & electron transport chain)
 - storage of carbohydrates
- Fats
 - most common sources (foods)
 - breakdown of fats (lipolysis)
 - oxidation of fats for energy (b-oxidation)
 - storage of fats
- Proteins
 - most common sources (foods)
 - metabolism of proteins
- Energy Systems (overview & definition)
 - ATP-PCr system
 - glycolysis
 - aerobic metabolism
 - function of macronutrients in each system

How to categorize sports & make appropriate nutrition recommendations

- What energy system is the MOST dominant and utilized during training?
- Endurance Sports - main characteristics
 - #1 -
 - #2 -
 - #3 -
- Strength Sports - main characteristics
 - #1 -
 - #2 -
 - #3 -
- Combination Sports - main characteristics
 - #1 -
 - #2 -
 - #3 -
- What key items do we want to focus on when making recommendations for our athletes?
- What are the ultimate goals of the athlete and sport they are participating in?

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Overview of general macronutrient recommendations for athletes

- Endurance athletes
 - carbohydrates: 7-13g/kg/day
 - protein: 1.5-2g/kg/day
 - fat: 1.5-2.2g/kg/day
- Strength athletes
 - carbohydrates: 5-8g/kg/day
 - protein: 1.7-2.2g/kg/day
 - fat: 1.5-2g/kg/day
- Weight Class Sports
 - carbohydrates 3-8g/kg/day
 - protein: 1.8-2.2g/kg/day
 - fat: 0.5-2g/kg/day
- Practical Application: how do we apply these general recommendations to our individual clients?

Nutrient Timing: Strategic Fueling Guidelines

- Pre-workout
 - Day(s) before competition (glycogen loading?) -
 - 3-6 hours prior competition -
 - 30-60 minutes before -
 - 15 minutes before -
- Peri-workout
 - < 1 hour -
 - > 1 hour -
 - > 90 minutes -
 - Environmental considerations -
- Post-workout
 - general recommendations for recovery (recovery windows)
 - #1 -
 - #2 -
 - rapid recovery (when recovery window prior to competition is limited)
- Practical Application: What do these recommendations look like in terms of food? What is realistic for your athlete?

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Supplements:

- Safety guidelines & label checking: 5 most important items to check for
 - #1 -
 - #2 -
 - #3 -
 - #4 -
 - #5 -
- Strong evidence for use & general guidelines for use
 - b-alanine/sodium bicarbonate
 - dose: 4-6g/day
 - duration: 2-4 weeks
 - timing: 30 minutes pre-workout
 - caffeine
 - dose: 3-6mg/kg body mass
 - duration: when needed
 - timing: 30-60 minutes prior exercise
 - creatine
 - dose: 3-5g/day or loading phase of 20g/day for 5 days
 - duration:
 - daily
 - loading phase = 1 week; maintenance w. 5g/day daily
 - timing: post-workout
 - Energy Drinks/Pre-workout supplements
 - dose: dependent on ingredients
 - duration: when needed
 - timing: ~30 minutes prior to exercise
 - Protein Powders or EAA's
 - dose: 25-30g high quality protein
 - duration: daily or when needed
 - timing: immediately after - 2 hours
- When is it appropriate to suggest these supplements? Practical Application

Conclusion & Questions: Thank you for your time!

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Resources: Kreider, R. B. (2019). Essentials of exercise & sport nutrition: science to practice. Lulu Publishing Services