

Performance Nutrition for Endurance Athletes



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What is Performance Nutrition?

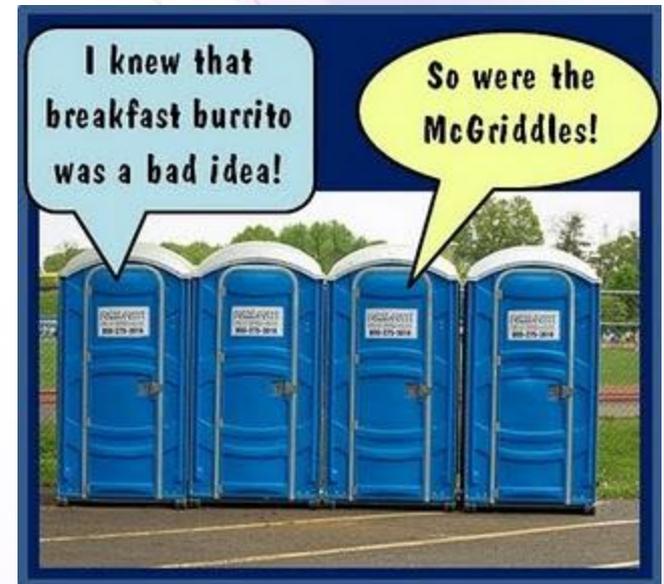
- Definition:

Strategically utilizing food to gain an advantage in training adaptations and performance



Performance Goals for the Endurance Athlete

- Improve Body Composition & Weight
- Improve Metabolic Efficiency
- Enhance Recovery
- Eliminate GI Distress
- Increase Stamina for Competition!



Body Composition & Racing Weight



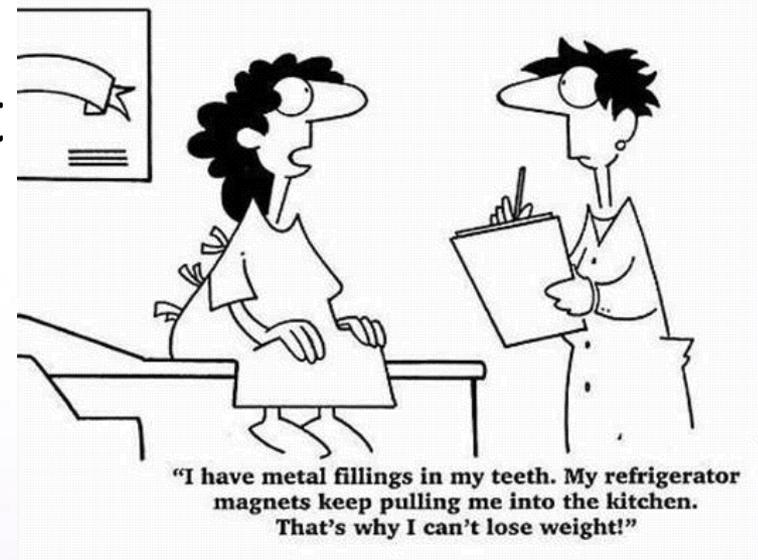
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- Improve the Power to Weight Ratio

- Decrease body fat mass
- Maintain muscle mass

- Finding your Racing Weight

- Criterion Workouts
- Recovery from training
- Daily Energy



- Optimizing for the Race Environment

- Cold vs. Hot races

Nutrition Periodization

Immune system, anti-inflammatory responses, health			Macrocycle
Pre-season	Competition	Off-season	Mesocycle
Macro-, micronutrient and fluid timing, quality and quantity		Weight management	
Post-workout nutrition	CHO frequency	Energy control	Microcycle



Energy Flux

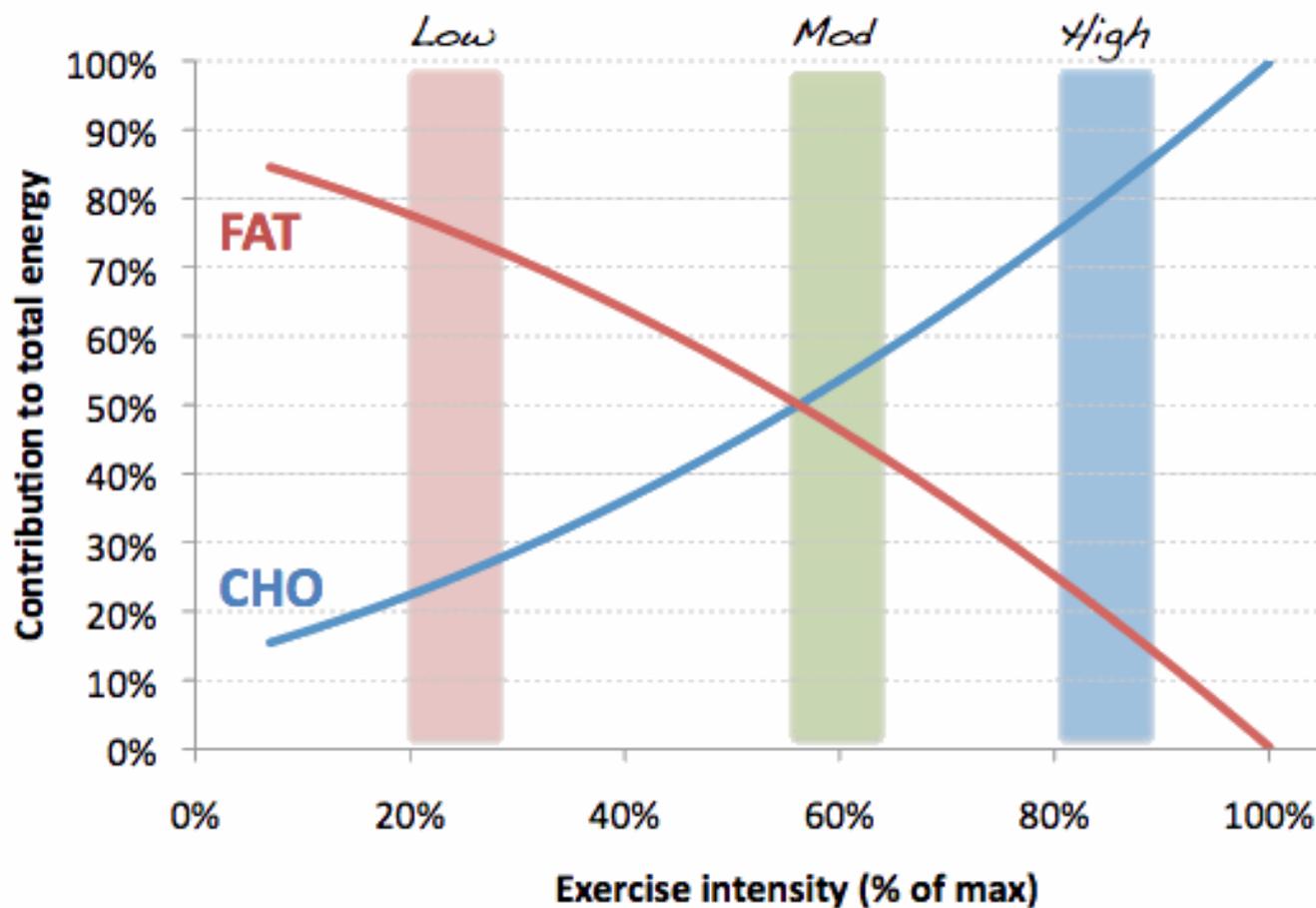
- What
- When
- Why
- How Much



Metabolic Efficiency: The Crossover Concept



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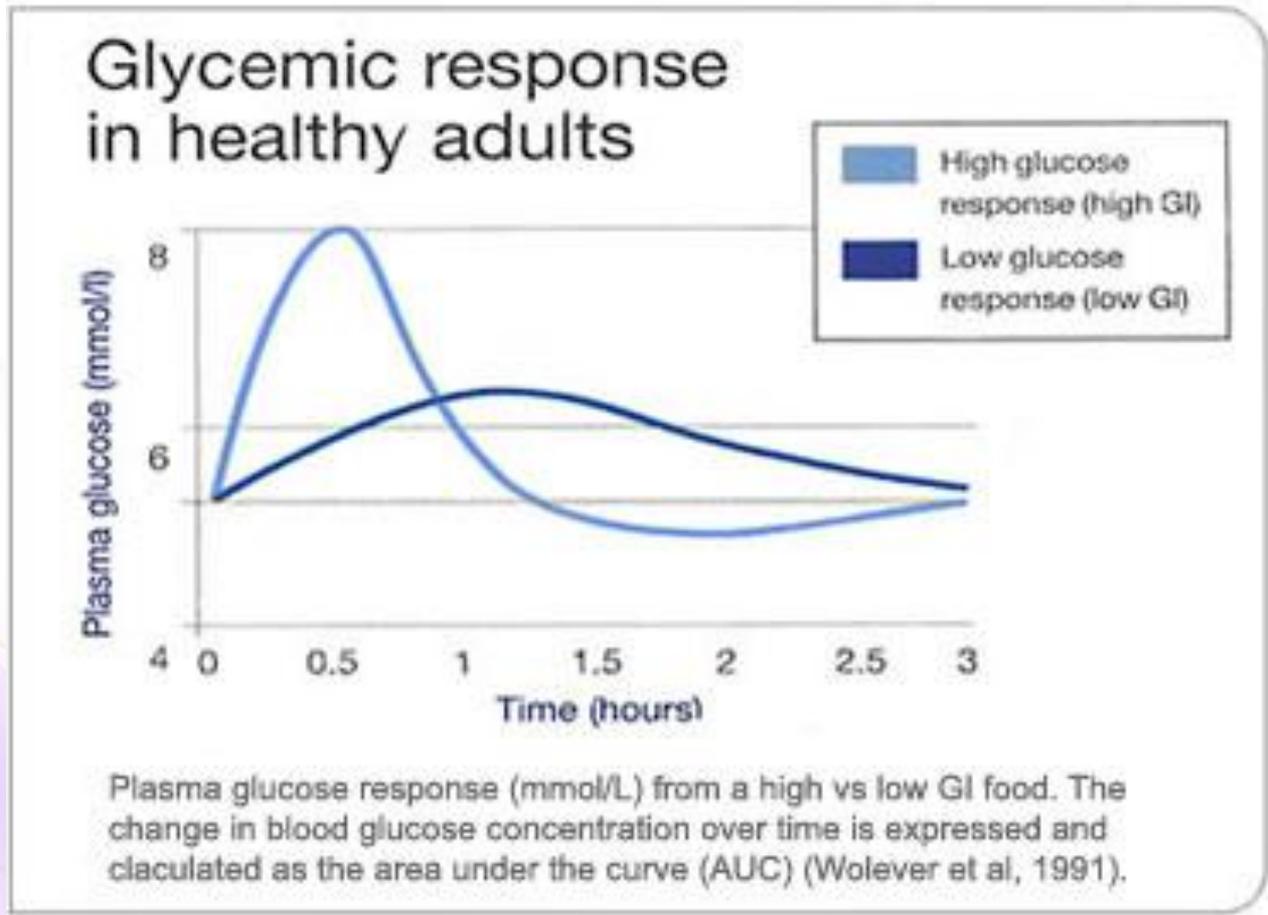
Improving Metabolic Efficiency



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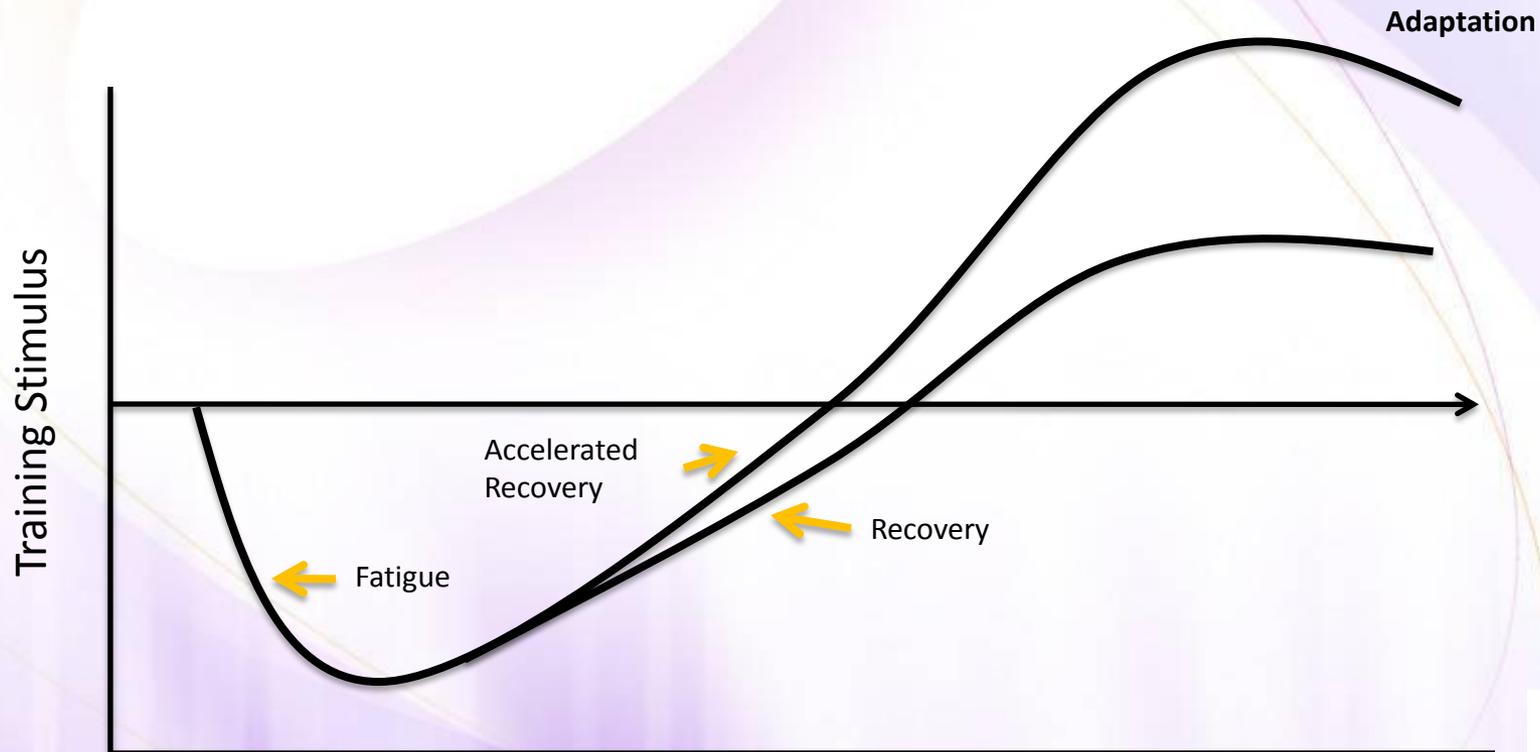
- Improve body composition
- Improves time to exhaustion
- Helps to minimize fatigue by delaying glycogen depletion

Keys to Metabolic Efficiency



Recovery Nutrition

Recovery Starts Before Training Begins!



Recovery Nutrition

- Come to the start line well fueled!
- Consume your post-training snack right away!
- Continue to nibble throughout the day.
- Hydrate properly!
- Sleep well!



Race Day Nutrition: Keys To Eliminating GI Distress

- Use low residue foods to fuel for the race
- Choose your fueling system wisely!
- Train your gut!



Race Day Nutrition: Low Residue Foods

- What are low residue foods?
 - Whole wheat vs white bread
 - Chunky peanut butter vs. creamy peanut butter
 - Quinoa vs. white pasta
- Start 3 days in advance of the race!
- Keep fiber down to about 10 grams per day.
- Restore muscle glycogen

Race Day Nutrition: Fuel Source

- Fluid to digest, transport and absorb fuel
- Minimize dehydration
- Don't drink too much at once!
- Choose your carbohydrate wisely!
 - Fluids
 - Bars
 - Gels

Race Day Nutrition: Choosing Your Fuel Source

Carbohydrate Source: Highest to Lowest Osmolality

Simple Sugars: Glucose, Fructose, Sucrose

Maltodextrins

SuperStarch



Race Day Nutrition: Nutrient Timing During the Race!

- Consume 0.5-2 grams of carbohydrate per minute
- Consume at regular 15 minute intervals
- Drink fluids with your carbohydrate & thirst
- Use a sipping method!
- Consume caffeine before the start & at regular intervals 😊



Performance Nutrition:

Key Points

- Race weight is important—fine tune it early in the training cycle
- Eat at the rate you expend energy
- Work on metabolic efficiency to improve body composition & optimize fuel stores for racing!
- Practice your race day nutrition in advance!
- Go out slow & finish strong! 😊



Thank You

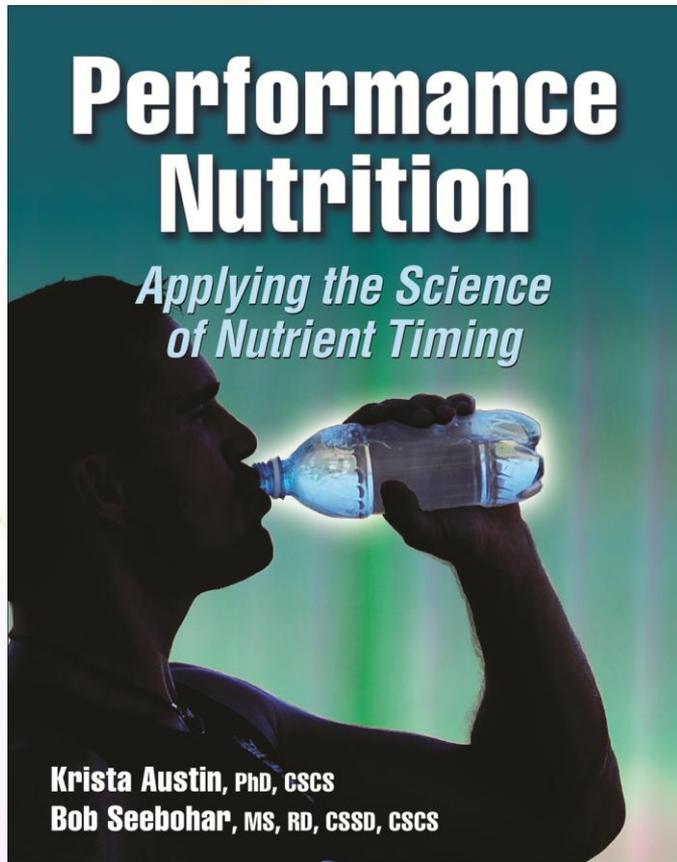


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Find Out More!



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Human Kinetics is offering viewers of this webinar a 20% discount on *Performance Nutrition: Applying the Science of Nutrient Timing*.

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