

# Optimal Fueling:

## The ins and outs of fueling for performance

- ✓ Benefits of Optimal Fueling:
  - Improved Strength, Speed, and Stamina
  - Delayed Fatigue
  - Enhanced healing of injuries and/or illness
  - **Improved Performance!!!**
  
- ✓ Consequences of Poor Nutrition
  - Weight loss
  - Strength loss
  - Lethargy
  - Chronic fatigue
  - Soreness, joint pain
  - Micronutrient deficit
  - Respiratory infections
  - Diminished performance
  - “Overtraining Syndrome”

### Healthy Food Choices



EAT CLEAN,  
EAT SIMPLE

### Adequate fueling



### Hydration



### Understanding Supplements

## Nutritional needs:

- ✓ Balance diet – high in energy due to higher energy expenditure during training and competition
- ✓ Carbohydrates – main energy source (glycogen)
  - Eaten at all meals before and after exercise
  - Frequent meals/snacks help you get enough
  - 50-60% total calories form carbohydrates
  - Sources: whole grains (bread, pasta, ect.), rice/quinoa, starchy veggies (squash, potato/sweet, fruits/juices(100%), some sports drinks)
- ✓ Protein – Repair and build muscles
  - Used for energy when carbohydrates are not available
  - 20-25% total calories (1.2 – 1.8 g/kg per day)
  - Supplements not needed (more convenience)
- ✓ Fat – helps sustain prolonged exercise
  - Source of stored energy – used in low-level activity
  - 20-25% of total calories
  - Healthy fat sources: nuts, seeds, olive oil, fish, avocados
- ✓ Hydration
  - Best time: before, during and after
  - Early fatigue is a sign of dehydration
  - Need 0.5 – 1 oz per pound of body weight
  - Benefits of Water:
    - Concentration
    - Coordination
    - Endurance capacity
    - Body temperature regulation
    - Proper muscle tone- helps with muscle contraction
    - Helps flush out extra toxins and waste
  - Increase your water:
    - Drink on a schedule, not when thirsty
    - Gulps are better to increase fluid intake
    - Avoid caffeine, carbonation and fruit juices prior to exercise
    - \*Beverages that contain alcohol are diuretics and cause water loss
  - Sports drinks:
    - Help with hydration
    - >60 minutes of exercise
    - Hot/humid environment
    - Sweat
    - Under fueled

### Physiological Effects of Dehydration

↑sweat rate → ↓ blood volume & ↑ Heart rate

↑ core body heat

↓ cardiovascular function (less O<sub>2</sub> and nutrient rich blood to muscles)

Slower removal of wastes → cramping, fatigue



## Pre- Exercise Fuel

Provide energy to working muscles  
 Maximize blood sugar and glycogen stores  
 Provide a psychological edge  
 Minimize hunger during play  
 Maximize hydration  
 Be individualized

Apple + 2 tbsp nut butter + water  
 Nut butter and banana sandwich + water  
 ½ cup of pasta with 2 oz of chicken + water  
 RX bar + fruit + water  
 Smoothie- fruit + water + protein powder  
 Greek yogurt + fruit + water  
 ¼ cup of nuts + fruit + water

Meals should be 2/3 normal size

Meals: 3-4 hours before competition

Snacks: 1-2 hours before competition

The closer they are to competition rely more on liquids and small snacks

## During Exercise Fuel

Focus on fluids  
 >60 minutes needs carbohydrate/electrolytes

Water  
 Gatorade + water  
 Water + cucumber

## Post – Exercise Fuel

Consider intensity/duration/next training session  
 Goal: glycogen restoration, fluid and electrolyte replacement, muscle repair and adaptation  
 Carbohydrates and protein (2:1, 3:1 ratio)

Protein shake- Whey/vegan protein powder + 1 cup berries + water  
 Balanced meal – 4-6 oz of protein + veggies + carbohydrate (2-3 servings)  
 Fruit + 3 oz of protein(chicken/fish) + water  
 Chocolate milk + water

Very important to fuel post exercise if competing in multiple events in one day

“Window” for Refueling

- First 30 minutes
- Glycogen repletion occurs faster after exercise
  - o Increased blood flow to muscle
  - o Enzymes that produce glycogen are most active

## Supplements

Sports bars, shakes, drinks DON'T replace a balanced diet  
 What are they made of? Is it pure?  
 Third party tested – NSF for sport/ informed choice

Protein: Grass fed Whey, Vega (pea, hemp, rice)  
 Multivitamin – top of the tank  
 Omega 3 (fish oil) – need 2000 – 4000 mg EPA/DHA  
 Probiotic – Gut health