

Sports Nutrition  
*Differentiating Mainstream Weight-Centric Nutrition vs. Sports Nutrition*

Anna Kasperick, RD, LN, CPT

## Conflict of Interest

I have no actual or potential conflict of interest in relation to this presentation

# Objectives



Understand the general principles of sports performance nutrition and how this differs from “weight-centric” nutrition



Summarize current fueling guidelines



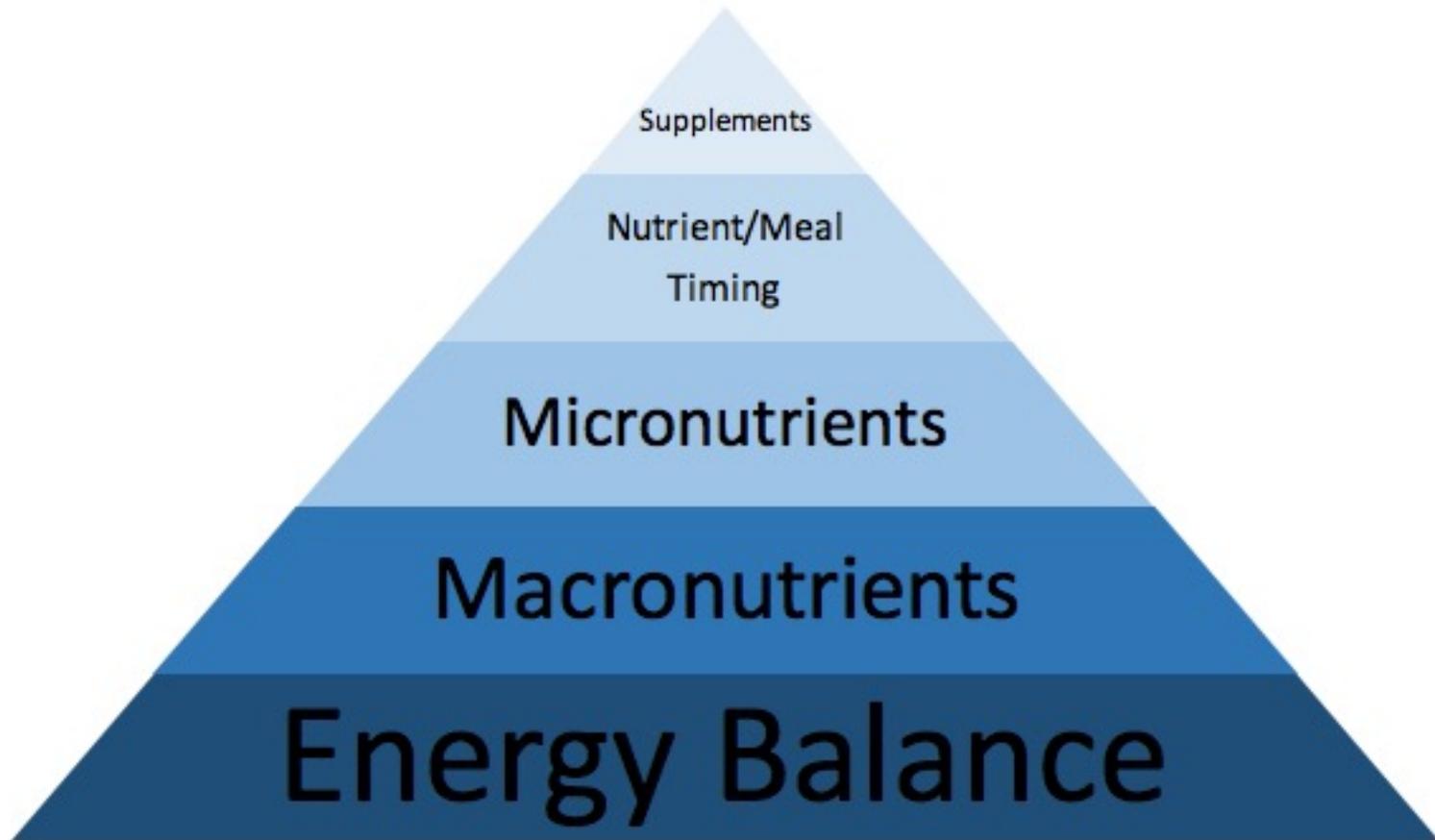
Understand food relationships, practical application, and sustainability.

## What Sport Nutrition is not...

- Weight Centric – solely focus on weight loss or fat loss
- Physique nutrition (i.e body building)
- Supplements
- “Thermogenics” – fat burners
- Fad Diets
  - Keto, intermittent fasting, low carb, high protein, south beach, paleo, Whole 30

## What Sports Nutrition is...

- Integral part of sports performance
  - Nutrition strategies that enhance athletic performance and recovery.
- Provided by qualified personnel (Registered Dietitian)
  - A specialist in sports dietetics who applies evidence-based nutrition knowledge in exercise and sports.



# Nutrition for Performance

- 3 main principles
  - Provide fuel for muscles
  - Hydration (replenish fluid and electrolyte needs)
  - Provide fuel for optimal recovery

# Mixed Messaging

Keto was the most googled diet of 2020



Sports nutrition



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## Nutrition Wins Games

- Physical and Cognitive effects on Performance
  - Research shows pre- and half-time feedings increase dribble speed in the second half of games in collegiate soccer players
- Fueling strategies have positive effects on game time decision making
- Plenty of studies show athletes who skip breakfast, regardless of their intake the rest of the day, have negative effects on their performance in a game later that day.

Energy Balance/Availability

## A Case for Carbs

- Carbs are an **essential** fuel for athletes who train hard and at high intensities.
  - Carbs are a key fuel source for both the brain and central nervous system. (approximately 60% of glucose in blood is metabolized by the brain daily)
  - Carbs are the only fuel source that can be utilized in the absence of oxygen.
    - Used by both anaerobic and oxidative pathways
    - Fat requires for oxygen to produce energy

## Why We Need Carbs

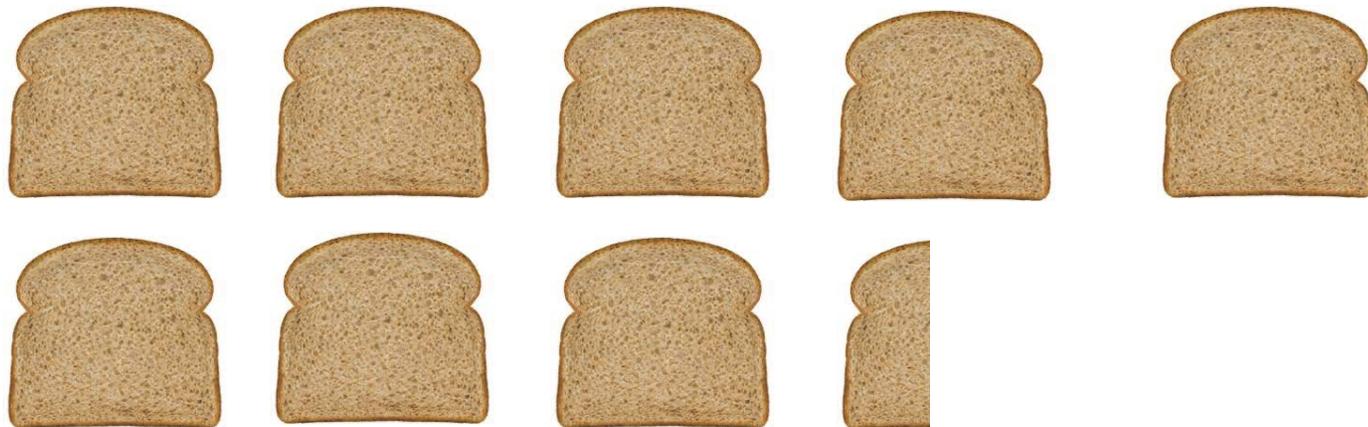
- Glycogen Stores are limited.
- Endogenous glycogen stores during moderate to high intensity exercise might only last 90 min 3 hours.
- Work output drops as glycogen stores deplete.
- Depletion of glycogen stores is associated with increased muscle protein breakdown and **immune suppression**.
- Low carbohydrates diets increase cortisol.

# Immunity

- Carb intake provides immune protection
  - Adequate intake reduces
    - cortisol and epinephrine
    - cytokine production and improve inflammatory recovery

## Recommendations

- Carbohydrate RDA ~ 130 grams/day (minimum) (this number is based off the amount of carbohydrate required to provide the brain with adequate glucose)



## Recommendations

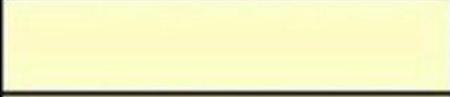
- Daily Carbohydrate Recommendations range from 3-12 grams/kg day (depending on duration & intensity)
- Nutrient Timing
  - Pre-training 3:1
  - During
    - Duration of 1-2 hours 30 g/h
    - Duration of 2-3 hours 60 g/h
  - Post training 2:1 ratio of carbohydrates to protein

# Hydration

- fluid deficits of  $>2\%$  BW can compromise cognitive function and aerobic exercise performances
- Measurement of pre and post exercise body weight can help an athlete estimate sweat losses
- Most practical way to monitor hydration is urine

# AM I HYDRATED?

## Urine Color Chart

<b>1</b>		If your urine matches these colors, you are drinking enough fluids
<b>2</b>		Drink more water to get the ideal color in Shade 1 and 2.
<b>3</b>		Dehydrated
<hr/>		
<b>4</b>		You may suffer from cramps and heat-related problems
<b>5</b>		Health risk! Drink more water.
<b>6</b>		Health risk! Drink more water.
<b>7</b>		Health risk! Drink more water.
<b>8</b>		Health risk! Drink more water.

## Needs Analysis

- Daily Schedule
- Access to food (who does the shopping and cooking)
- Seasonal Schedule
- 24-hour recall, food frequency questionnaire
- Allergies
- Appetite
- Hunger
- Energy levels
- Development

## Changing the Narrative

- Why emphasis on weight loss is harmful rhetoric
  - Poor relationship with their body
  - Promotes under fueling and meal skipping
  - Can lead to “overtraining”
  - Results in poor performance and recovery
- Talking with our athletes as food is fuel
  - LTAD (Long-term athlete development)

## Case Study One

- 17 y/o female
- Sport: Track/Cross Country
- Injury: Femoral Stress Fracture
- Years of overtraining, high volume running, inadequate energy intake, nutrient deficiencies present?
- Seeking anti-inflammatory meal plan to help with recovery and inflammation

## Goals

- Evenly space balanced meals and snacks throughout the day, starting with Breakfast
- Add in whole grains, starchy veggies, and fruit
- Increase overall servings
- Prioritize timing of refueling for recovery – taking advantage of that metabolic window to replenish glycogen stores
- Periodize nutrition around training and runs
  - carbohydrate – 5-7g/kg body weight per day = 55kg X 275 grams-385 grams
- Start 5000 IU vitamin D/day and Omega 3 supplementation

## Case Study 2 (making weight sports)

- 15 y/o male
- Sport: Wrestling
- Struggling to keep his weight consistent for weigh ins
- Constant restricting and then binging after matches. Poor hydration habits.

## Goals

- Proper Weight Cutting Strategies:
  - Walk around hydrated – (5-8% of your body weight should be scratch weight during season)
  - Don't cut water too early.
  - Small more frequent balanced meals, starting with Breakfast
  - Avoid high sodium and high fiber foods 24-48 hours prior to weigh in
  - If advised, cut back on high carbohydrate foods 24 hours prior to weigh in
  - Replenish immediately following weigh ins with electrolytes and carbohydrates

Just because it makes you leaner, doesn't mean it  
makes you a better athlete.