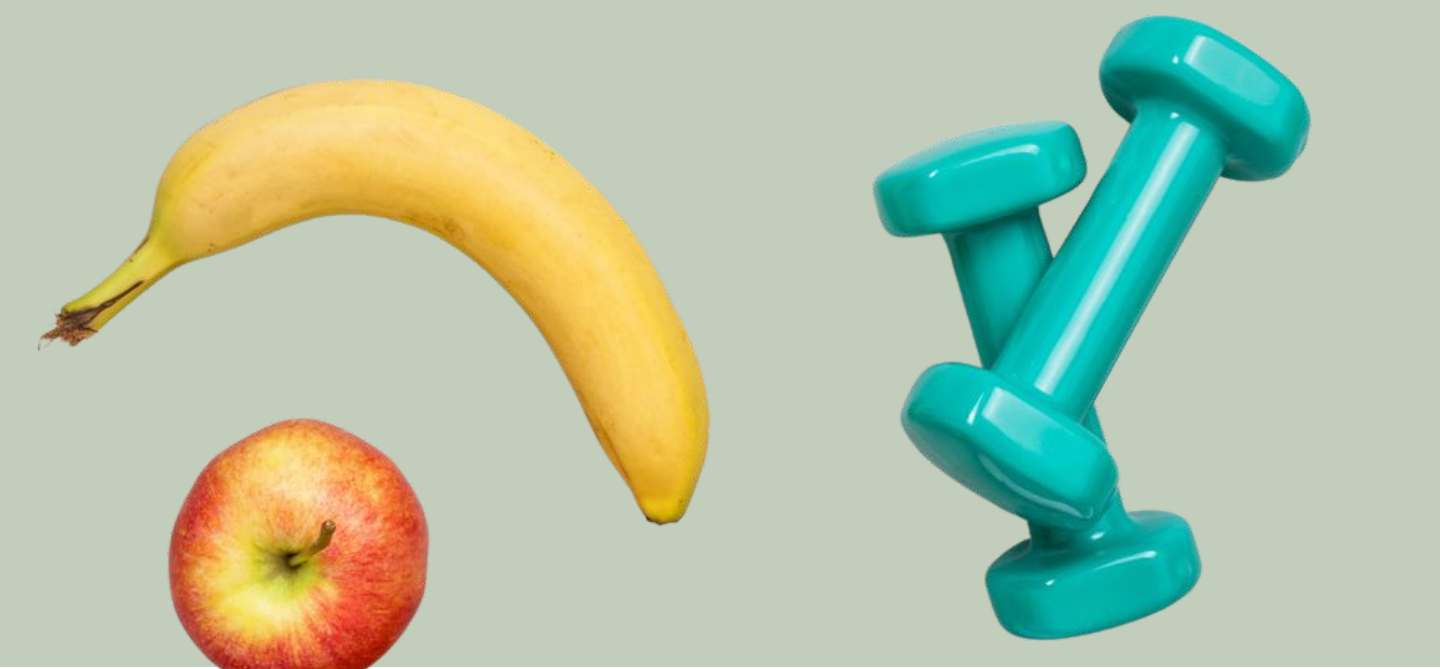


Fuel Forward, LLC

SPORTS NUTRITION



IN THE TRENCHES



Presented by Kailah Murphy



www.fuelforward.me

April 7, 2025

Background



Boston College

Director of Football
Nutrition

Boston

University
Adjunct Faculty

Fuel Forward, LLC

Sports Dietitian

University of Virginia

Associate Director of
Olympic Sports Nutrition

Hats of a Sports Dietitian



Relationship Building

- Building rapport with athletes
- Building rapport with medical and coaching staff
- Identifying Mentors and Peers w/in the Field



Education

- 1:1 counseling
- Nutrition strategy
- Plate Coaching
- Group education
- Supplement Safety
- Cooking Demos



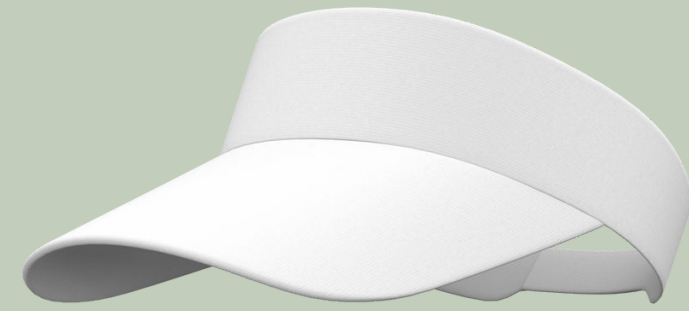
Clinician

- MNT
- Injury/Rehabilitation
- Interdisciplinary Care Team Collaboration
- Body Composition
- Biomarkers
- DE/ED Care



Operations

- Budget
- Fueling Station
- Training Table
- Food service
- Vendor
- Competition Planning



Advocacy

- Affiliations
- Current/Emerging Research
- Maintaining Licensure (RD, CSSD, etc)



What is Our Mission?

Using evidence based nutrition recommendations to advise athletes on fueling their bodies and recovering effectively **inside and outside of sport.**

How?

- 1:1 Counseling
- Group Ed
- Cooking Classes
- Shopping Strategy
- Performance Plate Coaching
- Individualized Nutrition Strategy
- **Being Present!!**

Who's On

Our Team?

- **BUILD RAPPORT WITH THEM**
- **COLLABORATE ON HOLISTIC ATHLETE CARE PLANS**
- **SPEND THE MOST TIME WITH YOUR ATHLETES**
- **EYES AND EARS**



INTERDISCIPLINARY TEAM MEMBER

ATHLETIC TRAINING



INTERDISCIPLINARY TEAM MEMBER

SPORTS PSYCH, MENTAL HEALTH SERVICES



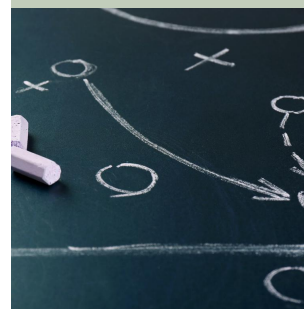
INTERDISCIPLINARY TEAM MEMBER

PHYSICIAN



INTERDISCIPLINARY TEAM MEMBER

STRENGTH AND CONDITIONING



COACHES

As a Practitioner, Where Do You Get Most of Your Nutrition Information?

issn

international society of sports nutrition

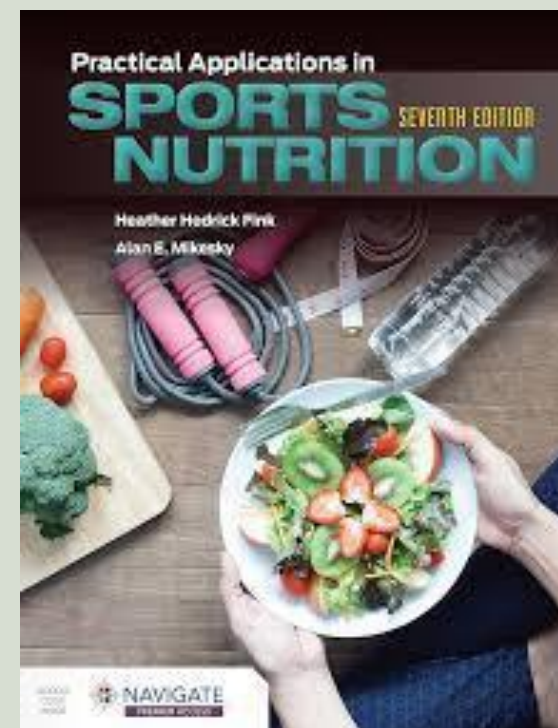
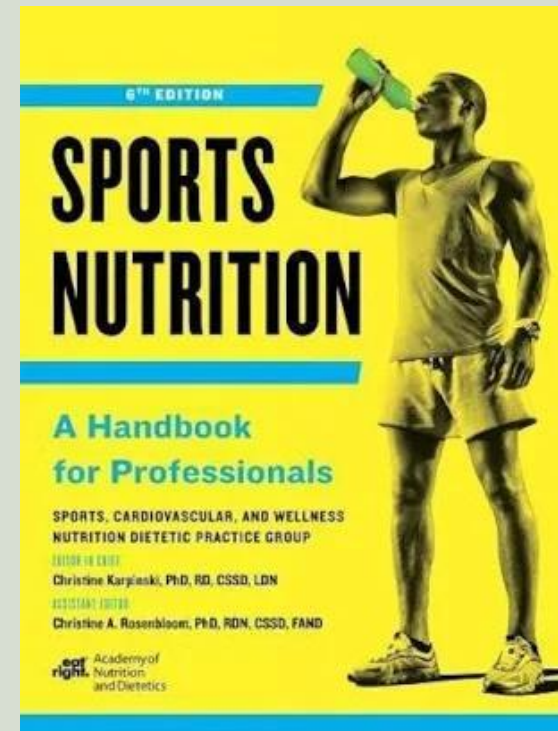
The ISSN - Why Go Anywhere Else?!

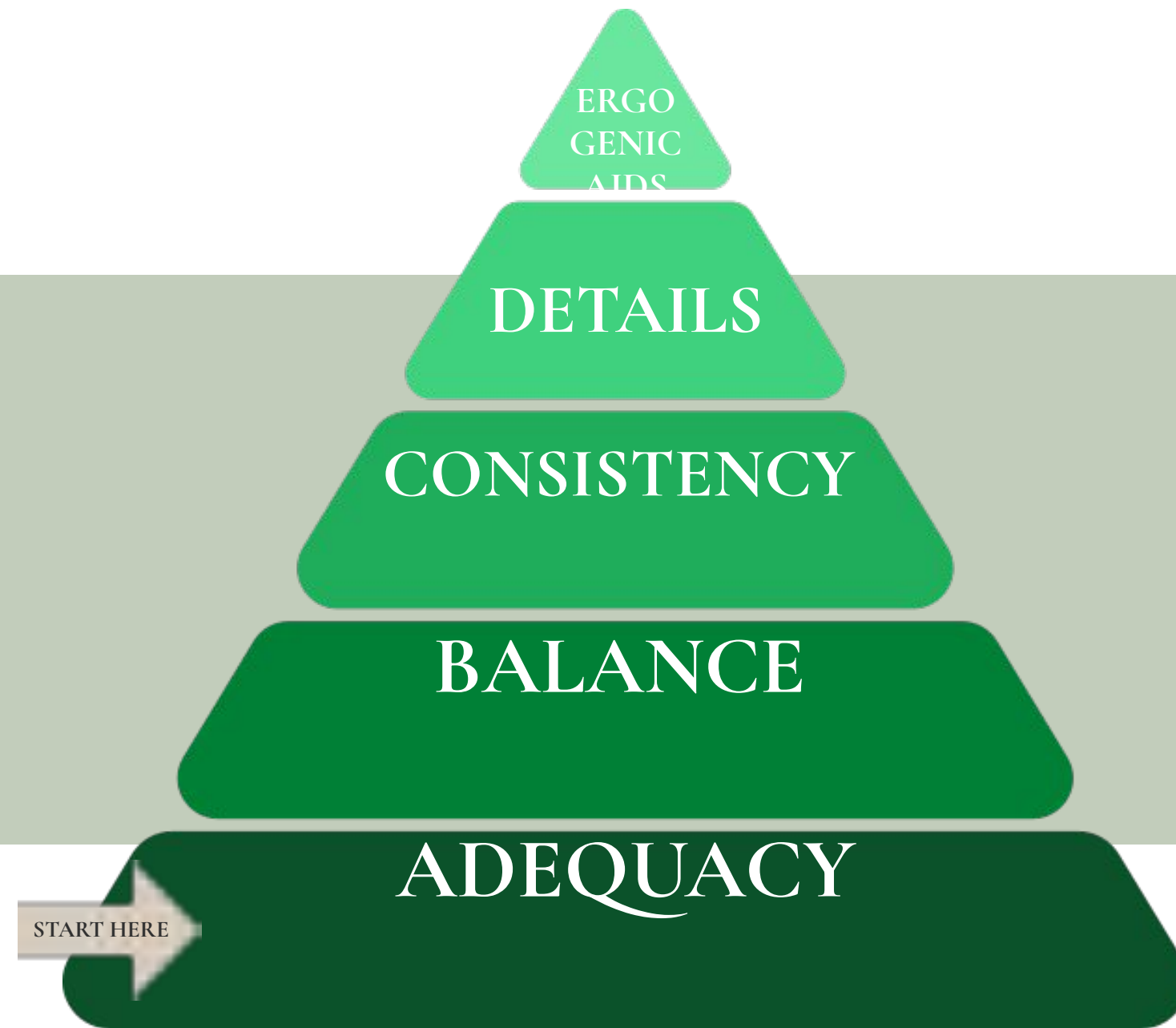


· A · S · P · D · A ·
FUELING VICTORY®

SHPN DPG

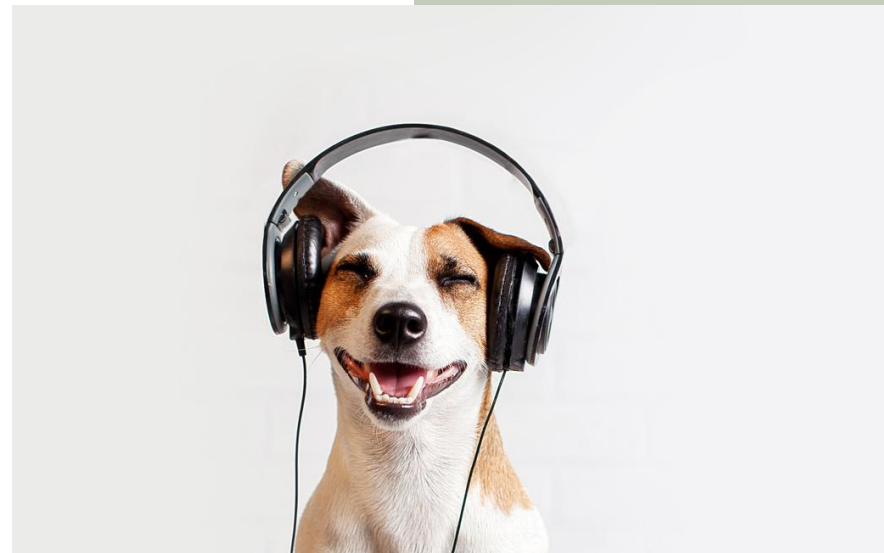
eat
right.





Foundational Concepts

As a Dietitian, we have a superpower:



Listen.

How do we approach 1:1 and increase rapport?.

- **Do not Assume!**
- **Start with the basics**
- **Ask open-ended questions**
- **The Athlete is the EXPERT on themselves -
Ask the athlete to educate you!**
- **Remain open-minded**
- **Allow silence**
- **Put their goals first**

Understanding Your Athlete.



Their Lifestyle

- Attend Practice
- Attend Meals
- Understand their sport
- Responsibilities + Priorities
outside of athletics



Their Starting Point

- How has their life experience shaped
their relationship
 - with food?
 - with their body?
- Current nutrition knowledge?
- Readiness to change?



Their Goals

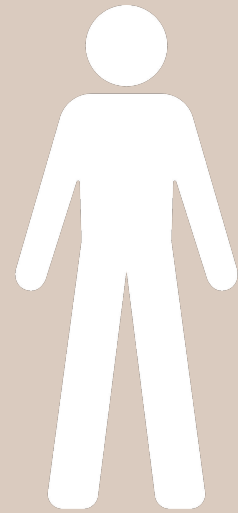
- Optimal / Desired outcome
- Encourage intentional and balanced
eating habits that align with PA
- Make it make sense to them (the light
switch analogy)



Nutrition for Performance

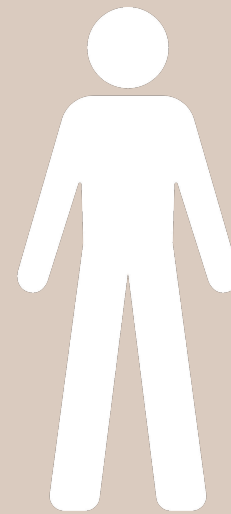
DEFINING ATHLETE ENERGY NEEDS

INCREASING DAILY
ENERGY NEEDS



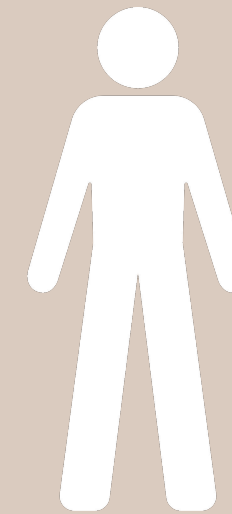
Individual Needs

- Basal Metabolic Rate (BMR)
- Activities of Daily Living (ADL)
- Physical Activity (PA)



Athlete Needs

- BMR + ADL + PA
- **Training + Recovery**



Needs During Injury

- BMR + ADL + PA
- **Training + Recovery**
- **Injury recovery**



What is LEA?

$$EA = \frac{\text{Energy Intake (EI)} - \text{Exercise Energy Expenditure (EEE)}}{\text{Fat-Free Mass (FFM, kg)}}$$

LOW ENERGY AVAILABILITY (LEA)

WHAT YOU WILL FEEL:

| | MALES | FEMALES |
|---------------------------------|-------|---------|
| IMPAIRED ATHLETIC PERFORMANCE | ✓ | ✓ |
| FREQUENT INJURIES | ✓ | ✓ |
| FREQUENT ILLNESS | ✓ | ✓ |
| LOSS OF MUSCLE MASS | ✓ | ✓ |
| LOW BLOOD PRESSURE | ✓ | ✓ |
| DEPRESSION/ANXIETY/IRRITABILITY | ✓ | ✓ |
| IRREGULAR MENSTRUAL CYCLES | | ✓ |



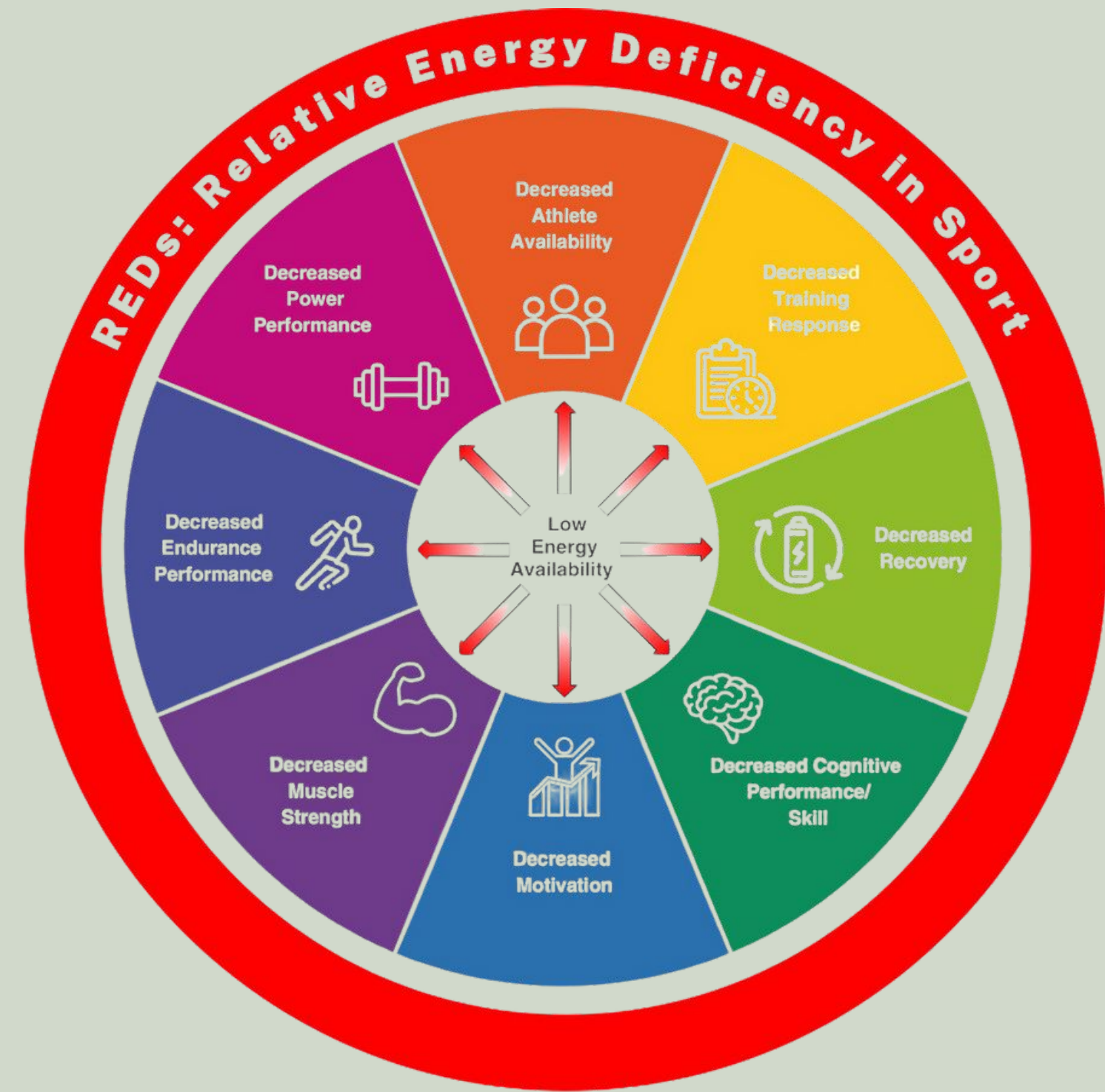
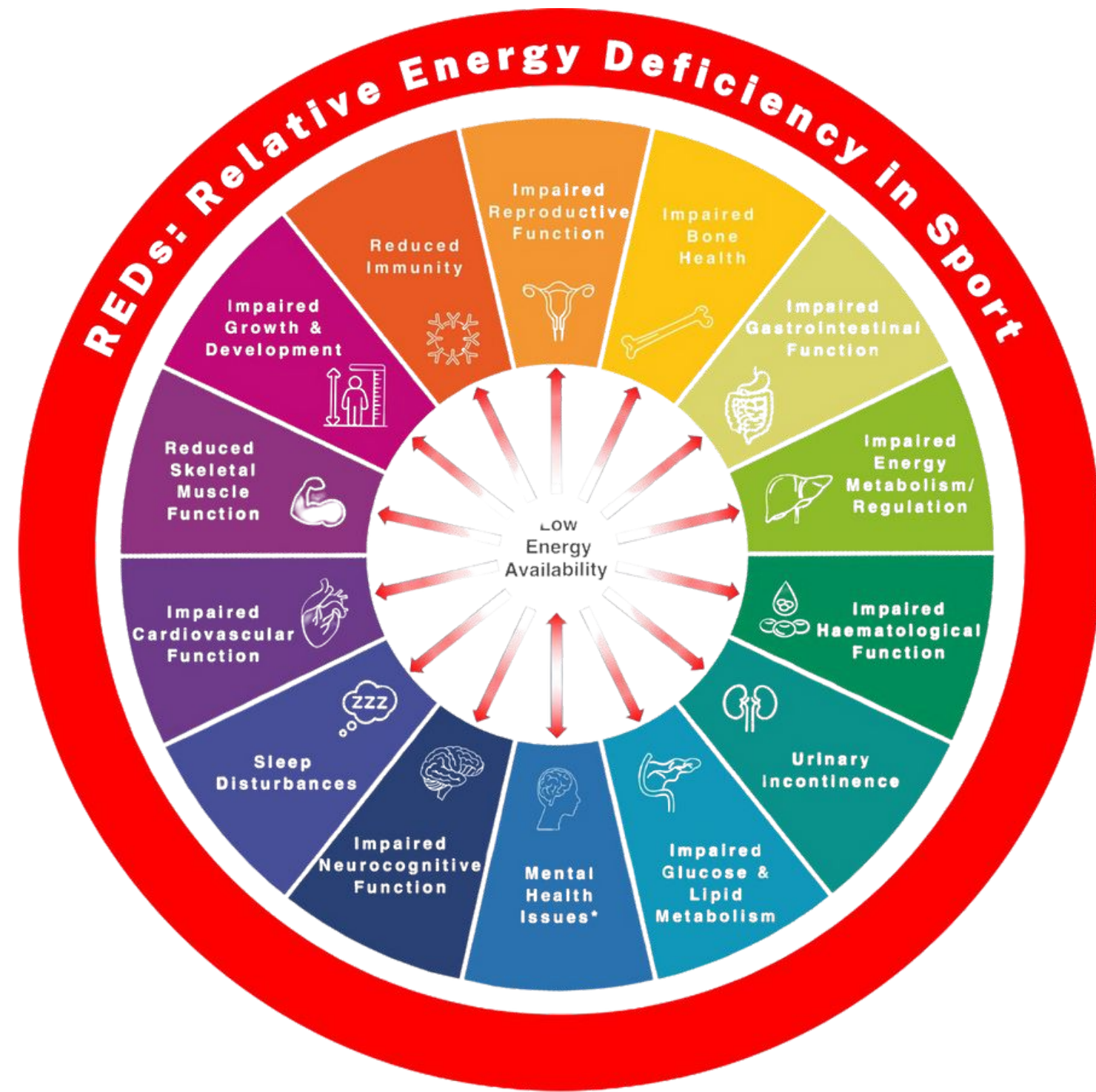
LOW ENERGY AVAILABILITY (LEA)

WHAT YOU WON'T SEE:

| | MALES | FEMALES |
|---|-------|---------|
| DECREASED BONE DENSITY | ✓ | ✓ |
| INCREASED RISK OF FRACTURE | ✓ | ✓ |
| LOWER MUSCLE BUILDING CAPACITY | ✓ | ✓ |
| IMPAIRED CARDIAC + BLOOD FUNCTION | ✓ | ✓ |
| FOOD CONVERTED TO ENERGY MORE SLOWLY | ✓ | ✓ |
| HORMONAL DISTURBANCE (INCLUDING GROWTH HORMONE) | ✓ | ✓ |
| IMPAIRED REPRODUCTIVE FUNCTION | ✓ | ✓ |



What is REDS?



What is REDS? cont.

IOC's Approach to Prevention of LEA and Management of REDS

- ✓ Education for athletes, coaches, and medical staff
- ✓ Early detection through regular monitoring of energy intake, menstrual function, and performance markers
- ✓ Individualized nutrition plans to ensure/restore adequate energy intake
- ✓ Multidisciplinary intervention involving sports dietitians, psychologists, and medical professionals

Body Composition

- **What Information are you looking for?**
- **Best Practices**
- **Advocacy**
- **Body Composition Data is PHI**

Types

- **Skinfold Calipers**

Measures subcutaneous fat at specific sites using a caliper.

- **Bioelectrical Impedance Analysis (BIA)**

Uses a small electrical current to estimate body fat, muscle mass, and water content.

- **Underwater Weighing (Hydrostatic Weighing)**

Determines body density by comparing weight on land vs. weight in water.

- **BodPod (Air Displacement Plethysmography)**

Measures body volume using air displacement.

- **DEXA (Dual-Energy X-ray Absorptiometry)**

MNT + Biomarkers

- **Clinical Experience**
- **Common Athlete Nutrient Risks and Deficiencies**
- **Interdisciplinary Collaboration and Biomarker Testing**



Iron

AT RISK:

- Contact sports & running
- Female athletes
- Vegetarian athletes



Vitamin D

- Indoor training / climate
- Lack of sun exposure
- Clothing
- Skin pigmentation



Multivitamin

- Consider to fill in the Gaps

HOW DO WE BUILD UPON NUTRITION ED?



What's Next?

- IDENTIFYING FOOD GROUPS
- IDENTIFYING FOODS THEY ENJOY
- PRACTICE BUILDING PLATES TOGETHER
- TRACK CONSISTENCY AND IMPROVEMENTS OVER TIME (BODY COMP, PERFORMANCE, SELF ASSESSMENT).
- **CELEBRATE MILESTONES!**

Start By,

- IDENTIFYING THEIR GOALS
- IDENTIFYING HOW THEY LEARN BEST
- STARTING WITH THE BASICS

Performance Plate

Coaching

- Design your plate based on training intensity
- Emphasize food group types and timing
- Create an individualized fueling strategy
- Great for hands-on and visual learners

THE ATHLETE'S PLATE EASY TRAINING DAY

GRAINS + CARBS 25%

- Pasta
- Rice
- Potatoes
- Cereals
- Breads
- Legumes

LEAN PROTEIN 25%

- Poultry
- Beef/Game/Lamb
- Fish
- Eggs
- Low-Fat Dairy
- Soy (e.g. Tofu, Tempeh)
- Legumes/Nuts*

FRUITS + VEGETABLES 50%

- Fresh Fruit
- Raw Vegetables
- Cooked Vegetables



THE ATHLETE'S PLATE MODERATE TRAINING DAY

Longer duration, moderate intensity practice/training or two practices – one technical focused and one endurance focused.
Baseline – can be adjusted to easy or hard based on the athlete's training.

GRAINS + CARBS 35%

- Pasta
- Rice
- Potatoes
- Cereals
- Breads
- Legumes

LEAN PROTEIN 25%

- Poultry
- Beef/Game/Lamb
- Fish
- Eggs
- Low-Fat Dairy
- Soy (e.g. Tofu, Tempeh)
- Legumes/Nuts*

FRUITS + VEGETABLES 40%

- Fresh Fruit
- Canned Fruit
- Dried Fruit
- Raw Vegetables
- Cooked Vegetables

FATS

- Avocado
- Oils
- Nuts
- Seeds
- Cheese
- Butter



HYDRATION

- Water
- Dairy/Non-Dairy Beverages
- Diluted Juice
- Flavored Beverages (Low/Zero Calorie)
- Coffee/Tea

FLAVORS

- Salt/Pepper
- Herbs
- Spices
- Vinegar
- Salsa
- Mustard
- Ketchup

THE ATHLETE'S PLATE HARD TRAINING DAY

Two-a-day high intensity practice/training or competition day.

GRAINS + CARBS 50%

- Pasta
- Rice
- Potatoes
- Cereals
- Breads

LEAN PROTEIN 25%

- Poultry
- Beef/Game/Lamb
- Fish
- Eggs
- Low-Fat Dairy
- Soy (e.g. Tofu, Tempeh)
- Legumes/Nuts*

FRUITS + VEGETABLES 25%

- Fresh Fruit
- Canned Fruit
- Dried Fruit
- Raw Vegetables
- Cooked Vegetables

FATS

- Avocado
- Oils
- Nuts
- Seeds
- Cheese
- Butter



HYDRATION

- Water
- Dairy/Non-Dairy Beverages
- Diluted Juice
- Flavored Beverages (Low/Zero Calorie)
- Coffee/Tea

FLAVORS

- Salt/Pepper
- Herbs
- Spices
- Vinegar
- Salsa
- Mustard
- Ketchup

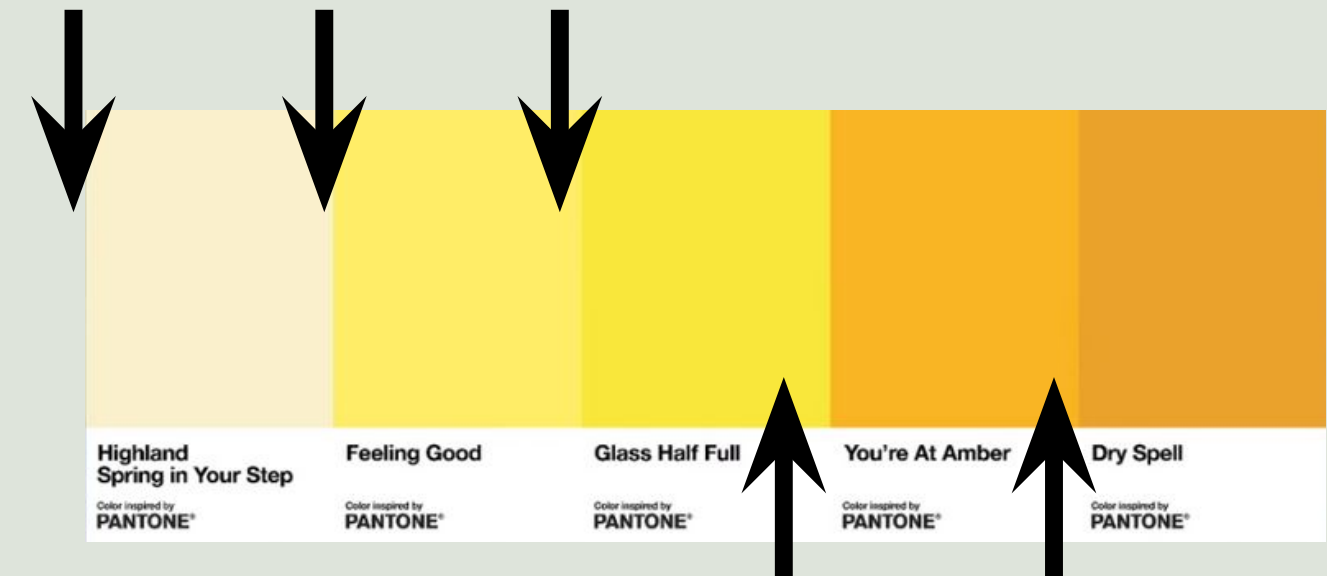
Hydration

- Provide Education
- Calculate Individual Fluid Needs
- Track Hydration and Electrolyte Loss
- Replace Losses

For a 200 lb athlete = 8-12 Dasani per day



First 3 indicate hydration



Indicates dehydration

Fluid + Carbohydrate + Sodium



260 mg

420 mg
+ Carbs

600 mg
per 28 oz bottle
+ carbs

670 mg
+ Carbs

1780 mgs

2300 mg

Nutrient Timing

PRE-WORKOUT

1 Focus on easily digestible carbohydrate.

2 MEAL TIMING: 3-4 hours before
SNACK: 30-60 min before

3 IDEAS: Honey Stinger Waffle,
MUSH, Fig Newton



1 Focus on protein + carbohydrate

2 TIMING: Immediately after-30 min

3 IDEAS: Chocolate Milk, Shakes,
Rx Bar, PB&J, Yogurt + Granola

POST-WORKOUT

Example Fueling Strategy

- Start the Day Fueled
- Book-End Training Sessions
- Training Plates Based on Needs and Training Intensity
- Hydration
- Space out Protein Throughout the Day

FUEL YOUR DAY

3 STEP TRAINING PLATES



BREAKFAST

- 3 eggs with peppers, mushrooms, spinach, tomatoes, cheddar
- 2 pieces turkey sausage
- 2 pieces toast with butter
- 24 oz water



PRE-WORKOUT SNACK

- MUSH
- Banana
- 16 oz water



POST-WORKOUT SNACK

- Slice of toast with 2 tbsp PB + apple slices
- Chocolate Core Power
- 24 oz water



LUNCH

- Grilled chicken pita with feta, greek salad, avocado
- Orange slices + mixed berries
- 32 oz water



SNACK

- Honey Stinger Waffle
- That's It Bar
- 24 oz water



DINNER

- Chipotle burrito bowl with rice, beans, fajita veggies, lettuce, pico de gallo, cheese, steak, guacamole
- 32 oz water

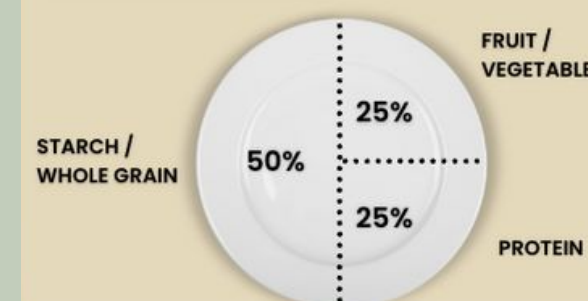


SNACK

- 2 honey stinger waffles, berries, & a scoop of vanilla ice cream
- 16 oz water



HARD PLATE



SUPPLEMENTS



- Third Party Tested
- Free from NCAA banned substances
- Ingredients label accuracy



Supplements (cont)

- What is a supplement?
- DSHEA 1994
- Supplement Facts vs Nutrition Facts
- Permissible, Impermissible, and Banned Substances
- AIS Supplement Grades (ABCD), Position Papers, and Meta-Analyses

Considerations:



Safe?

Is it NSF Certified for sport?



Evidence Based?

Is there evidence to support efficacy?



Aligned

Does it align with athlete goals?



Cost

Is it cost effective?

Food Service Management



FUELING STATION
PRE TRAINING QUICK ENERGY
POST TRAINING PROTEIN RECOVERY
REHYDRATION + ELECTROLYTES



TRAINING TABLE
BREAKFAST BUFFET
LUNCH BUFFET
PERFORMANCE PLATES



VENDOR PARTNERSHIP
SURVEY DATA 81% OF ATHLETES
USING MEAL DELIVERY SERVICE IN
ADDITION TO TRAINING TABLE

Planning

& Budgeting

Budget



Fueling Station

- Grab & Go
- Delivery
- Travel
- Staffing
- Quick Carbs
- Protein
- Electrolytes

Food Service

- Meals Offered
- Times
- Quantity
- Frequency
- Travel, Pre and Post
- Staffing
- Vendors

Supplements

- Vendor
- Third Party Testing
- Injury Protocol
- Quantity
- Cost
- Frequency of Use
- Distribution
- Travel

Other

- Body Composition
- Analytics
- Supplies
- Software
- Subscriptions
- Travel

Contact Me

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Thank You!



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