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Professional Education Series

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Recovery Nutrition for Athletes: Sifting Out the Science from the Sensationalism

TODAY'S AGENDA:

- Introduction & Housekeeping
- Speaker Introduction
- Presentation
- Q&A
- Closing

WEBINAR HOST:

Keith Hine MS, RD
Sr. Director of Healthcare & Sports at Orgain

WEBINAR PRESENTER:

Becca McConville, MS, RD, LDN, CSSD, CEDRD-S
Sports Nutrition & Performance Expert

Common nutrition goals of athletes

Optimising performance

Fueling

Hydration

Recovery

Body composition

Optimizing training adaptation

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Common nutrition goals of athletes

1. Fueling
2. Hydration
3. Recovery
4. Optimizing training adaptation
5. Optimizing performance

What is Foundation Nutrition?

Daily Needs for Carbohydrate and Recovery for Athletes

Activity		Daily carbohydrate intake target
Light	Low intensity or skill-based activities	3-5 g/kg/day
Moderate	Moderate exercise program (e.g., 1h per day)	5-7 g/kg/day
High	Endurance program 1-3h a day moderate-high intensity	6-10 g/kg/day
Very high	Extreme commitment 4-5h a day moderate-high intensity	8-12 g/kg/day

Nutrition and Athletic Performance - Joint Position Statement American College of Sports Medicine, Academy of Nutrition and Dietetics and Dietitians of Canada. MSSE 2016

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The Other Macros

Protein

Endurance athletes: 1.4-1.6 gms/kg

Power based sports: 1.6-1.8 gms/kg

Strength based: 1.8-2.0 gms/kg

Weight class, “strength based” 2.0-2.2 gms/kg

While tracking is not encouraged, I think demonstrating that athletes' needs are based upon their energy needs & performance traits

Fat

1.0 gm/kg

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Low Energy Availability - RED-S

Energy Availability			
Weight (lbs):	155	<-- Enter numbers here	
Body fat %:	20%		
Kcal intake:	1800		
Kcal burned during exercise:	500		
Energy Availability (kcal/kg/FFM):	23	Should be between 40-45!	
Danger Zone: 30 kcal/kg/FFM	2191		
Kcal needed for 45 kcal/kg/FFM	3036		

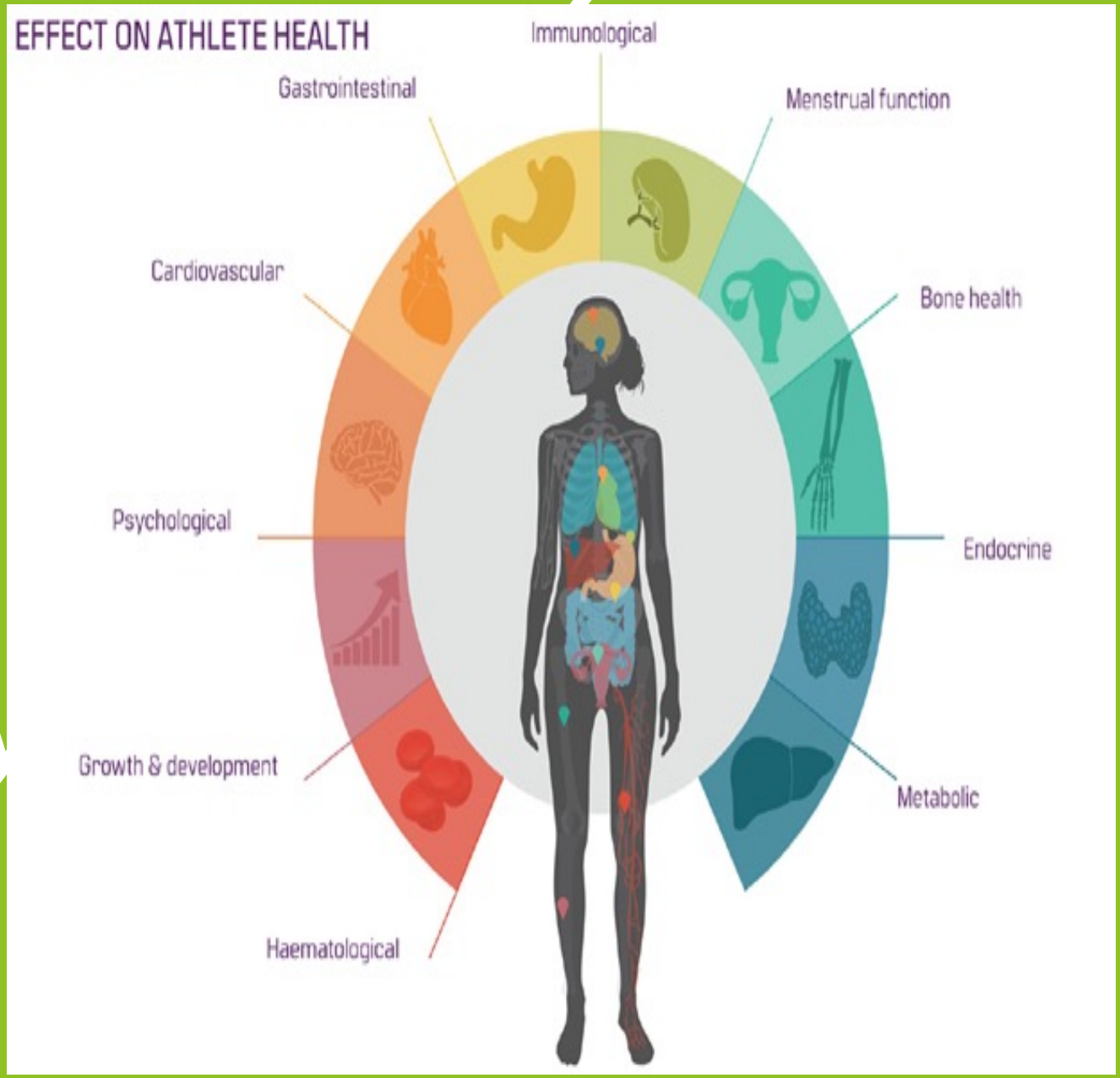
Logue D, Madigan SM, Delahunt E, Heinen M, Mc Donnell SJ, Corish CA. Low Energy Availability in Athletes: A Review of Prevalence, Dietary Patterns, Physiological Health, and Sports Performance. Sports Med. 2018 Jan;48(1):73-96.

Low Energy Availability & Impact on Recovery

Keay N, Francis G

Infographic. Energy availability: concept, control and consequences in relative energy deficiency in sport (RED-S)

British Journal of Sports Medicine 2019;**53:**1310-1311.



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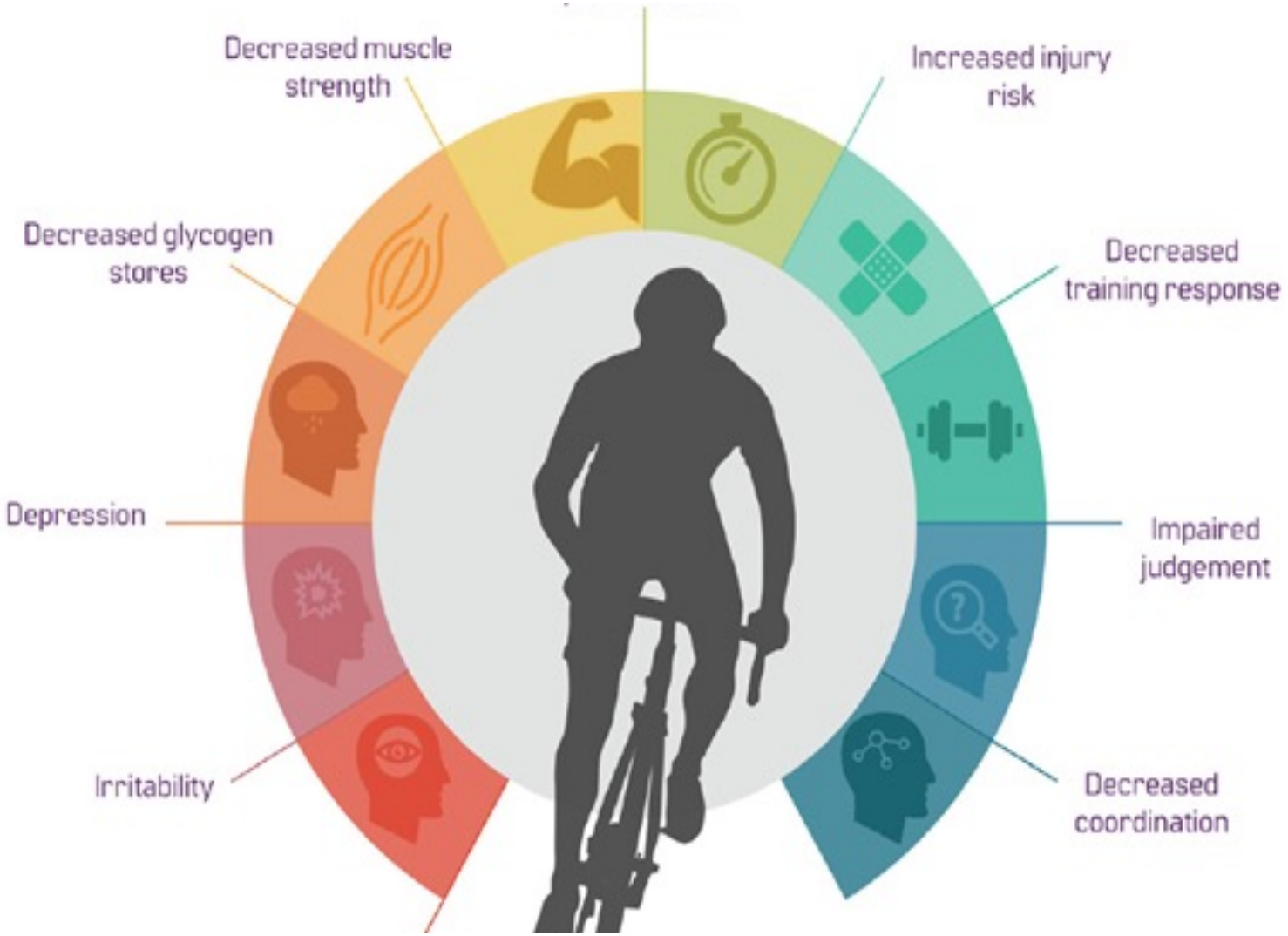

RED-S Impact on Performance

The single-most contributor to poor athlete health & recovery is…

Under Fueling

Under Fueling

Under Fueling

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Nutrition & Athlete Immune Health

- How many of these are related to a lack of recovery?

- *Image: GSSI Nutrition & Athlete Immune Health*

Ten risk factors for infection in athletes.	
1.	Autumn and winter — common cold and flu season
2.	Poor hygiene and exposure to sick people
3.	Recent symptoms
4.	Air travel
5.	Life stress, depression and anxiety
6.	Low energy availability
7.	Poor sleep
8.	Increases in training load, e.g., training camp
9.	National vs. International level
10.	Low mucosal immunity (saliva/tear immunoglobulin-A)

Table 2. Ten risk factors for infection in athletes.

Recovery= Resiliency

Why infection is incompatible with success in elite sport.
• Medal winners suffer fewer and shorter URI
• Infection is the 2nd most common reason to present to a team medic, after injury
• Sickness correlates negatively with training volume
• Illness accounts for 1/3 of all lost training days
• 2/3 of illnesses result in "time loss" from training and competition; 1/3 of illnesses result in "performance restriction"
• Recent below-the-neck symptoms increases the likelihood of not finishing an endurance event
• Heavy exercise can extend an ongoing infection

• Heavy exercise during infection, or after incomplete recovery, can lead to medical emergencies …
  ◦ Rhabdomyolysis[1]
  ◦ Myopericarditis[2]
  ◦ Exertional heat stroke

Table 1. Why infection is incompatible with success in elite sport. URI = upper respiratory infection; [1]Rhabdomyolysis = breakdown of muscle tissue that can lead to renal failure; [2]Myopericarditis = acute inflammation of the pericardium usually caused by an infection.

"What they do or don't do today impacts tomorrow when it matters the most"

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What does recovery do?

Nutritional goals will be adjusted accordingly to the desired outcome.

- **Endurance** = bigger gas tank
- **Strength** = consistent build blocks
- **Power** = ability to generate quick energy
- **Injury Resiliency** = decrease inflammation & tissue repair
- **Immunity**-Maintains immune system-protection from URI, GI illness

How do we recover?

- **ReStore** - Fluids & electrolytes
  - Lowers core temperature
  - ~ 16-24 oz for every pound lost in sweat
- **RePlace Fuel** - Carb & protein
  - Carb - 0.8g to 1 gram/kg bodyweight / hour
  - Protein ~ 20-25 grams (0.25-0.5 g/kg BW/meal) X 4 meals
  - Simplistic is best 4:1 (endurance); 3:1 (combination); 2:1 (strength)
- **RePair**
  - Focus on protein pacing (20-40 grams each meal)
  - Aim to give body nutrients that aid in cellular repair and rebuilding (antioxidant rich diet)
- **Rest** (Remodeling period)

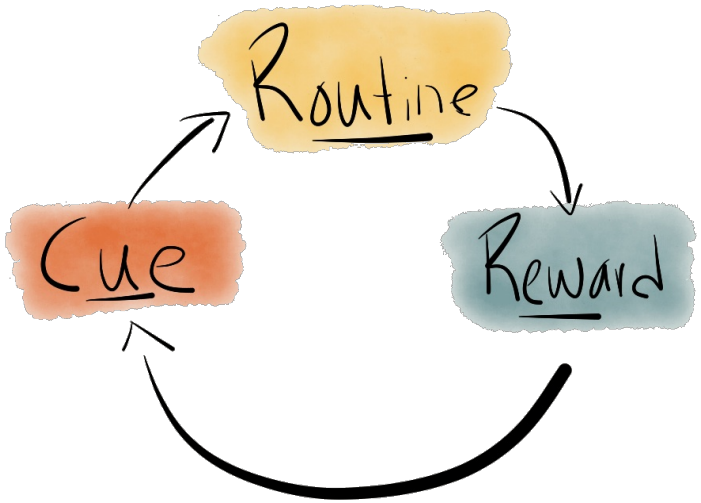
The Micronutrients & Phytochemicals

These play an important part of providing building called phytonutrients.

- **Key nutrients are:**
- Vitamin C (Tissue repair/generation, immune function)
- Vitamin A (cell growth, immune function)
- Vitamin D (Calcium absorption, bone health)
- Calcium (skeletal function , bone development)
- Magnesium (protein synthesis, energy metabolism, improves vasodilation)
- Zinc (protein synthesis, immune function)
- Copper (RBC formation, immune function, bone health, elastin)

https://www.sportsrd.org/wp-content/uploads/2018/11/Nutrition-Support-for-Inury-Recovery-Return-to-Play.pdf

Recovery Rituals



- **Foundation nutrition** must be set first!
- Window of Opportunity.
- **Recovery Pantry** - car, locker, backpack, breakroom, gas station snacks
- Build it into your **routine** to make it habitual
- **Plan** your nutrition according to your training (FITT)
- **Stay** on top of your hydration game

Consistency is Key

NO FRUIT JUICE

Nutrition Facts

12 servings per container

Serving size **1 Carton (330mL)**

Amount per serving

Calories **250**

	% Daily Value*
Total Fat 7g	**9%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 20mg	**7%**
Sodium 260mg	**11%**
Total Carbohydrate 32g	**12%**
Dietary Fiber 1g	**4%**
Total Sugars 12g	
Includes 11g Added Sugars	**22%**
Protein 16g	**32%**

Vitamin D 5mcg 25%	•	Calcium 520mg 40%
Iron 0.4mg 2%	•	Potassium 160mg 4%
Vitamin A 230mcg 25%	•	Vitamin C 24mg 25%
Vitamin E 4mg 25%	•	Thiamin 0.12mg 10%
Riboflavin 0.3mg 25%	•	Niacin 3mg 20%
Vitamin B_6 0.3mg 20%	•	Folate 95mcg DFE 25%
Vitamin B_{12} 0.6mcg 25%	•	Biotin 3mcg 10%
Pantothenic Acid 1mg 20%	•	Phosphorus 390mg 30%
Iodine 40mcg 25%	•	Magnesium 75mg 20%
Zinc 3mg 25%	•	Copper 0.2mcg 20%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Convenience = Key to Consistency

Use a **RTD (ready to drink)** or complete powder as a base can make meeting recovery needs easier.

Mix your RTD or powder into a:

- smoothie/smoothie bowl
- cold brew coffee
- favorite bakery treat
- cool off with a creamsicle

What are they selling?

Build Muscle
(Pump, Ripped, Cut)

Power
(ATP, Stamina, Boosters)

Lean
(Skald, Fat Burner, Enemy of Speed, Jacked)

Faster/Energy
(Voltage, Hype-Up, Focus, Endurance)

There is NO shortcut

Foundation first

Then build for success

Conclusion

- Nutrition periodization matched with training periodization builds a recovery foundation.
- Guide your athletes with convenient, consistent nutrition choices.
- Enable your athlete to sort science from influence.
- Empower athletes to develop daily habits to build recovery into their day.

Thank you for joining us today.

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