TACTICAL ATHLETE NUTRITION GUIDANCE: CARBOHYDRATE FUELING

SUMMARY

Carbohydrates: Essential for brain/muscle fuel, high-intensity exercise, focus, and recovery; low carbs reduce energy, focus, and recovery.

Daily Needs: 3–12 g/kg body weight/day based on training (light to extreme); personalize intake.

WHY CARBOHYDRATES MATTER

- Primary fuel for the brain and muscles
- Supports high-intensity & endurance exercise
- Improves skill, focus & reaction time
- Enhances training adaptations at a cellular level

WHAT HAPPENS WHEN CARBS ARE LOW?

- Reduced energy & work out
- Impaired focus & concentration
- Slower muscle recovery
- Increased perception of fatigue

DAILY CARBOHYDRATE NEEDS

(Based on training & body weight)

Daily Needs for Fueling and Recovery

Training Load	Carbs per kg body weight/day
Light (skill, technique)	3-5 g/kg
Moderate (1 hr/dsy)	5-7 g/kg
High (1-3 hrs/day)	6-10 g/kg
Extreme (4+ hrs/day)	8-12 g/kg

STRATEGIES TO MAXIMIZE CARBOHYDRATE AVAILABILITY

BEFORE EXERCISE

- Goal: Start with full glycogen stores
- Normal levels restored within 24 hours of rest + proper intake
- Carb-loading (48 hours): Beneficial for events > 90 minutes
- Pre-exercise meal (1-4 hours before):
  - 1-4 g/kg body weight
  - Low fat, low fiber, low-mod protein
  - Choose familiar, easy to digest foods or liquids
- GI considerations:
  - Low glycemic index (GI) foods may sustain energy longer
  - Mixed evidence on performance benefits

DURING EXERCISE

- Benefits
  - Glycogen sparing
  - Maintains blood glucose
  - Fuels muscle & brain
  - Activates CNS “reward centers” (improves pacing/focus)
- When needed
  - Events > 60-90 minutes
- New concept
  - Mouth sensing (rinsing mouth with carbs boosts CNS effects)
- Use a mix of glucose + fructose to improve absorption in long events

Training Load	Duration	Carbohydrate Target
• During brief exercise	< 45 minutes	Not needed
• During sustained high-intensity exercise	45-75 minutes	Small amounts, including mouth rinse
• During endurance exercise, including start and stop sports	60-150 minutes	30-60 grams per hour
• Extreme	4+ hrs/day	8-12 g/kg (ex. 175 lbs would consume 635-953g)

AFTER EXERCISE (RECOVERY)

- Goal: Replenish glycogen stores
- Best window: Start within 30-60 minutes post-exercise
- Recommendation:
  - 1.0-1.2 g/kg/hour for first 4-6 hours
- Meals/Snacks should be:
  - High in carbs
  - Aligned with energy needs
  - Based on food preference and availability

KEY TAKEAWAYS

- Carbs are essential for performance, recovery, and training adaptation
- Personalize timing, amount, and food types
- Factor in:
  - Training load
  - Duration and intensity
  - Environmental conditions
  - Digestive tolerance and preferences

RESOURCES:

1. Nutrition and Athletic Performance. Medicine & Science in Sports & Exercise 48(3):p 543-568, March 2016. | DOI: 10.1249/MSS.0000000000000852
2. Thomas DT, Erdman KA, Burke LM. American College of Sports Medicine Joint Position Statement. Nutrition and Athletic Performance. Med Sci Sports Exerc. 2016 Mar;48(3):543-68. doi: 10.1249/MSS.0000000000000852. Erratum in: Med Sci Sports Exerc. 2017 Jan;49(1):222. doi: 10.1249/MSS.0000000000001162. PMID: 26891166.