

NUTRITION FOR STRENGTH vs. ENDURANCE

GAZELLE
NUTRITION LAB

STRENGTH

ENDURANCE

Main Nutrition Goal

- Training and pre-competition
- For many strength sports, nutrition minimally affects performance on competition day

- Training and pre-competition
- Nutrition can make or break performance on competition day

Nutrient Needs

Protein: 1.4-2.0 g/kg/d

- some may eat ≥ 2.3 g/kg/d if eating high calorie
- Carbohydrate: 3-10 g/kg/d
- 3-5 g/kg rest or light day | 5-7 g/kg heavy day
- Fat: 20-35% of calories (focus on plant sources)

Protein: 1.2-1.8 g/kg/d

- needs may be much higher for ultra-athletes
- Carbohydrate: 3-10 g/kg/d
- up to 12 g/kg/d if carb loading pre-event
- Fat: 20-35% of calories (focus on plant sources)

How this looks in
real life

170 lb Elite Athlete (77 kg)
Calories*: 3500 – 3850 calories/d (45-50 cal/kg)
Protein: 110 – 155 g/d (1.4-2.0 g/kg)
Carbs: 230 – 540 g/d (3-7 g/kg)

*Calorie needs may change based on weight goals. Maintain protein levels during weight loss.

170 lb Elite Athlete (77 kg)
Calories*: 4600 – 5400 calories/d (60-70 cal/kg)
Protein: 95 – 140 g/d (1.2-1.8 g/kg)
Carbs: 230 – 924 g/d (3-12 g/kg)

*Calorie needs may change based on weight goals

Top Tips

1. Eat enough to support activity + daily life.
2. Meet protein needs. For most, protein >2 g/kg/d gets used as calories rather than muscle growth.
3. Space protein in 4 to 5, ~20-30 g increments throughout the day for optimal muscle protein synthesis.

1. Eat enough to support activity + daily life.
2. Eat a carb-heavy snack/meal before & after most workouts.
3. During exercise lasting 1 to 2 ½ hours, eat 30-60 g carbs/hour. For ultra-endurance exercise >2 ½ to 3 hours, eat up to 90 g/hour.

Common Misstep

Protein is essential but also use carbs around workouts to maximize effort and results.

Plan race day nutrition well in advance so you can practice it during long workouts.

HYDRATION

- Adequate hydration is essential for strength and endurance exercise.
- Any exercise that takes place outdoors is affected by the weather; athletes need to drink more water in both hot and extreme cold conditions.
- Athletes should sip fluids regularly and drink to thirst.
- Athletes exercising for longer than 60-90 minutes, particularly if exercise is intense or in the heat, may benefit from using a carbohydrate-containing sports beverage.

SUPPLEMENTS

- Before using, consider if diet optimized first. I.e., Eating enough? Including vegetables/fruit at every meal? Spacing protein? Eating before and after most workouts? Limiting processed food and simple sugar?
- Choose a supplement that is third-party tested. E.g., NSF Certified Sport, Informed Choice.

Supplements that may benefit some:

Creatine- improves high-intensity exercise performance and increases muscle mass by boosting energy production.

Caffeine- reduces fatigue and improves exercise quality. Caffeine can help before strength workouts and improve performance in the latter stage of endurance events. Some people have adverse performance effects. Test response individually.

Nitrate- improves exercise tolerance, economy, and endurance and may improve VO₂ max; effects are more significant in recreational athletes.

RESOURCES

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