

# NUTRITION IN RUNNING

## NUTRITIONAL BASICS

First of all, when it comes to nutrition for runners, it naturally **depends on what goal you have set for yourself**. For example, casual jogging, 800m sprint, 10km race or marathon.

In general, you should **rely on carbohydrates as your first source of energy**. They provide you with the necessary power for your training session or competition. **Depending on the length and intensity of your session/race, you will logically consume more or less carbohydrates**.

In addition to the amount, the **form of carbohydrates** (well-tolerated and proven carbs) **is also an important factor**. Because especially during running, gastrointestinal problems can occur due to the impact movements – you should avoid this at all costs! Therefore, **natural products are to be preferred**.

Another tip is to **avoid high amounts of fats, proteins and fiber** (e.g., legumes or a bulky salad should not be on the menu). Also the consumption of lactose before competitions did not prove to be optimal.

Note: If you are running for less than an hour, you do not need to worry about energy intake during the run. On the other hand, if you are running for much longer, you should add energy to avoid completely depleting your glycogen stores.

The **first 15 to 45 minutes are extremely important for optimal recovery** (especially after intensive units/competitions): In the so-called „open window“ the muscle cell is particularly open to glucose and amino acids. Make sure you take advantage of this!

- Foods you should avoid before a competition
  - Hopscotch fruits
  - Lettuce
  - Generally high amounts of fats, proteins as well as fiber
- Foods that support your performance
  - Potatoes
  - Pasta

- Rice
- Porridge
- Fruits like mango or bananas
- Prefer easily digestible, natural foods to avoid GI distress from running impact.

## NUTRITION ENDURANCE UNIT

- General Info
  - Training goals: Improvement of fat metabolism and decrease VLamax
  - Training method: Continuous or alternating method
  - Intensity: Low
  - Duration: Medium to long
  - Example units:
    - Easy run
    - "Train Low": fasting training in the morning or with depleted glycogen stores from a prior session
- Before Training
  - Basic consideration: Effective fat-metabolism training requires intensity control and avoidance of high intensities
  - Nutrition: Carbohydrate-moderate meal 2 to 3 hours before exercise, possibly with increased protein
  - Note for sessions over 2 hours:
    - POWER CARB after 1/3 to 1/2 of total time for higher dosage possible 60-80 g/h, or 1-2 GEL 40 depending on carbs from drinks
    - Additional energy from PORRIDGE BARS and, for very long sessions, PROTEIN BARS
  - Example meal: Muesli with yogurt or quark, salmon with baked vegetables and one sweet potato
- During Training

- Basic consideration: At low intensity up to FatMax, free fatty acids are primary fuel but carbohydrates are also burned
- Fueling: Use slow carbs early to limit deficit, then switch to faster carbs later
- Example: 30-35 g/h SLOW CARB
- After Training
  - Basic considerations: REFUEL carbs, REBUILD with protein, REHYDRATE fluids and electrolytes
  - Nutrition: Combine high-quality carbohydrates and proteins
  - Example: Within 30 minutes, 30-40 g RECOVERY SHAKE plus 5 apricots or dates
  - Follow-up food within 2 hours: Carbohydrate-rich meal and protective substances via fruits and vegetables, e.g., couscous salad, pasta, feta

## NUTRITION INTENSIVE UNIT

- General Info
  - Training goals: Improve carbohydrate turnover and increase VO<sub>2</sub>max
  - Training method: Interval, repetitive, or competitive method
  - Intensity: Medium to intensive
  - Duration: Medium
  - Example units: Intervals such as 4×2000 m. Competition-specific tempo runs
- Before Training
  - Basic consideration: Begin with full glycogen stores
  - If an intense session is tomorrow, eat a carbohydrate-rich dinner tonight
  - Nutrition 3 hours before: Carbohydrate-rich meal
  - Allow extra time pre-session due to GI stress from hard running
  - Examples: Overnight oats. Bread with almond butter and banana
- During Training

- Basic consideration: Carbohydrate use rises exponentially near or above threshold
- Fueling: Provide rapidly available carbohydrates to avoid relying on proteins for energy
- Examples by load: 40 g/h FAST CARB. For higher or longer load, 60-70 g/h POWER CARB or 1-2 GEL 40 depending on drink carbs
- "Train-the-gut" workouts: Increase up to 80 g/h once weekly to adapt digestion
- After Training
  - Basic consideration: REBUILD, REFUEL, and REHYDRATE. Immediate protein and carbs post-session leverage the open-window effect
  - Nutrition: Combine high-quality carbohydrates and proteins
  - Examples: Within 30 minutes, 30-40 g RECOVERY SHAKE plus 5 apricots or dates. After very intense work, 40-50 g RECOVERY 8
  - Follow-up meal within 2 hours: Carbohydrate-rich food plus fruits and vegetables, e.g., vegetable curry with rice

## **NUTRITION SHORT DISTANCES (5KM, 10KM...)**

- Before Competition
  - Basic consideration: Ensure glycogen stores are filled
  - Nutrition 2-3 hours before start: High carbohydrate, low fiber, low fat
  - Example breakfast: Bread roll with honey. Spelt bread with banana
- During Competition
  - Basic consideration: For short efforts, no additional energy supply is needed during the run
  - Fueling: No in-race supply necessary
- After Competition
  - Basic consideration: Supply high-quality energy sources to actively support regeneration
  - Nutrition: Prioritize a high-value protein source and complex carbohydrates

- Examples: Within 30 minutes, 40-50 g RECOVERY 8. Within 60-90 minutes, 30-40 g RECOVERY SHAKE plus 5 dates
- Follow-up meal: High-carbohydrate food such as rice or noodle pan, with protein sources like kefir or natural yogurt, chickpeas, and feta cheese

## **NUTRITION LONGER DISTANCES (HALF MARATHON, MARATHON)**

- Before Competition
  - Basic consideration: Ensure glycogen stores are filled
  - Nutrition: CARBOLOADING
    - Last meal 2-3 hours before start: Carbohydrate-rich, low fiber and fat, small protein addition
    - Example breakfast: Bread roll with honey. Spelt bread with almond paste and banana
- During Competition
  - Basic consideration: For long-duration events, use a constant and well-tolerated energy source
  - Fueling per hour: 60-90 g POWER CARB (110-170 ml) or 1-2 GEL 40, adjusted for drink carbs
  - Logistics: Place individual supplies at aid stations, or use a drink vest with small RACE CARB X portions and take water on course
  - Example plans: HM - 4 stations every 5 km, take 30-40 g POWER CARB in ~250 ml each. Marathon - 8 stations every 5 km, 40-50 g in ~250 ml. Alt: every 5 km take 40-50 ml RACE CARB X and rinse with water
- After Competition
  - Basic consideration: Provide high-quality proteins and complex carbohydrates to promote recovery
  - Examples: Within 30 minutes, 40-50 g RECOVERY 8. Within 60-90 minutes, 30-40 g RECOVERY SHAKE plus 5 dates
  - Follow-up meal: High-carbohydrate food with a protein source, e.g., potatoes with vegetables, pasta with parmesan or feta

## **FINAL TIPS**

### **General nutrition tips for runners**

- Use mainly carbohydrates as an energy source – the amount always depends on the length and intensity of your session or race form
- To counteract gastrointestinal problems, use the „train the gut“ method and avoid large amounts of fats, proteins and fiber before training/competition
- If you are running for less than an hour, food is not necessary