

Athlete Name _____ Date _____

Contact _____

Email _____ Phone _____

Nutrition for Endurance Athletes

Why Is Nutrition Important for Endurance Athletes?

With endurance training, the main goal is to provide calories for daily activity and exercise. Replenishing glycogen (energy) stores lost in exercise and repairing lean muscle mass are also important. Focusing on eating frequently throughout the day and fueling and hydrating before, during, and after exercise are key to training and performing at an optimal level.

Meal Planning Tips

- Eat frequent meals and snacks throughout the day. Do not skip meals.
- Include a quality carbohydrate, lean protein, and healthy fat with all meals and snacks to increase satiety.
- Include non-starchy vegetables and fruits with meals and snacks.
- Carbohydrate intake should range from 5 g/kg to 7 g/kg for moderate-duration and low-intensity training, 6 g/kg to 10 g/kg for moderate to heavy training, and 8 g/kg to 12 g/kg for extreme training.
 - Choose whole grains as your carbohydrate choice at meals (breads, bagels, tortillas, cereals, oatmeal, granola bars, crackers, pastas, rice).
- Protein intake should range from 1.2 g/kg to 1.7 g/kg.
 - Choose lean proteins such as chicken or turkey without skin, lean cuts of red meat, fish, low-fat dairy, eggs, beans, tofu, edamame, or whey or soy protein powder.
- Fat intake should range from 0.8 g/kg to 1.0 g/kg.
 - Increase intake of healthy fats such as peanut butter, nuts, seeds, flaxseed, olive oil, and salmon/tuna.
 - Decrease intake of saturated fats such as baked/packaged foods, high-fat meats (like ribs and wings), white, thick, creamy sauces (like Alfredo sauce), gravies, biscuits, croissants, doughnuts, and pastries.
- Hydration should be adequate so that urine color is pale yellow throughout the day.
 - Rely on water throughout the day and water/sports drinks during exercise.
- Consume post-exercise snack as soon as possible (within 30 minutes) after training.
- Limit alcohol intake.

Recommended Foods

Pre-Exercise

- Meal timing: 3 to 4 hours before exercise
- Meal composition: High in quality carbohydrates (200 g to 300 g) and lean protein, low in fiber and fat
- Meal hydration: 4 hours before activity, consume 17 oz to 20 oz water or sports drink, or 5 mL/kg to 7 mL/kg (2 mL/lb to 3 mL/lb)

- Snack timing: 30 minutes to 1 hour before exercise
- Snack composition: High in carbohydrate, moderate in protein, low in fat and fiber
- Snack hydration: 5 oz to 10 oz water or sports drink

During Exercise

- Carbohydrate intake should begin shortly after the onset of activity
- Timing: Consume 30 g to 60 g carbohydrate per hour spaced every 15 to 20 minutes
- Composition: High-glycemic carbohydrates such as sports drinks/gels/blocks/beans, fruit, high-carbohydrate bars with moderate protein, or crackers
- Hydration: Dependent on sweat rate
 - Average: 5 oz to 10 oz water or sports drink every 15 to 20 minutes
 - Sports drinks should contain 6% to 8% carbohydrate
 - Replace electrolytes lost with a sports drink or foods high in sodium and potassium

Post-Exercise

- Snack timing: Within 30 minutes post-exercise
- Snack composition: Quality carbohydrate and lean protein
 - Recommended amount: 1.0 g to 1.5 g carbohydrate per kg
- Meal timing: 2 hours after exercise (continue meals in 2-hour intervals up to 6 hours)
- Meal composition: Quality carbohydrate and lean protein, low in fiber and fat
 - Recommended amount: 1.0 g to 1.5 g carbohydrate per kg
- Hydration: Replace fluids within 24 hours after exercise by drinking 16 oz to 24 oz water or sports drink for every pound lost during exercise

Foods Not Recommended

Pre-Exercise

- High-fat foods (high-fat meats, heavy sauces/creams, fried foods, foods prepared with a lot of butter or oil, high-fat desserts)
- High-fiber foods (cruciferous vegetables, whole grains extremely high in fiber, beans)
- Carbonated beverages
- Sugar-sweetened beverages (soft drinks, fruit drinks, sweetened tea)
- Alcohol

During Exercise

- High-fiber carbohydrates
- High-fiber foods (cruciferous vegetables, whole grains extremely high in fiber, beans)
- High-protein foods (meats, dairy, high-protein energy bars)
- High-fat foods (high-fat meats, heavy sauces/creams, fried foods, foods prepared with a lot of butter or oil, desserts, large quantities of nut butters, nuts, seeds)
- Fluids containing more than 8% carbohydrate (juice, soft drinks, sweet tea, energy drinks)
- Alcohol

Post-Exercise

- After exercise, maximize recovery by eating a meal rich in quality, fiber-rich carbohydrates, lean protein, and heart-healthy fats.
- Drink enough fluids to replace losses.

Sample 1-Day Menu

(2,500 calories, 60% carbohydrate, 20% protein, 20% fat)

Meal	Menu
Breakfast (500 calories)	¾ cup low-fat cottage cheese with 2 cups chopped fruit 1 slice whole wheat toast with 1 Tbsp peanut butter and 1 Tbsp honey
Snack (250-300 calories)	Granola bar ½ scoop whey protein powder in 8 oz low-fat milk 1 piece of fruit
Lunch (500 calories)	Sandwich on whole wheat bread with 1 slice low-fat cheese, 3 oz meat, lettuce, tomato, and 1 Tbsp light mayo 15 whole wheat crackers <i>or</i> 15 pretzels 1 nonfat Greek yogurt 1 small piece of fruit
Pre-Workout Snack (300 calories)	1 serving reduced-fat crackers 1 serving low-fat string cheese 1 light yogurt mixed with ¼ cup whole grain cereal
Post-Workout Snack (300 calories)	16 oz low-fat chocolate milk
Dinner (500 calories)	1 cup pasta with ½ cup marinara sauce and 3 oz chicken breast 2 cups grilled vegetables 1 wheat roll <i>or</i> 2 x 2-in piece of cornbread
Snack (150 calories)	1 nonfat vanilla pudding; mix in 1 cup berries and 1 Tbsp nuts

Notes:

Sample 1-Day Menu

(4,500 calories, 60% carbohydrate, 20% protein, 20% fat)

Meal	Menu
Pre-Workout Snack (200-250 calories)	1 energy bar (200-250 calories)
Breakfast (1,000-1,100 calories)	1 whole wheat bagel with 2 Tbsp peanut butter and 2 Tbsp jelly Scrambled eggs made with 3-5 egg whites <i>or</i> 3 egg whites plus 1 whole egg 24 oz cappuccino
Snack (300-400 calories)	Shake made with 4 oz low-fat milk, 8 oz orange juice, 1 banana, and 1¼ scoops whey protein powder
Lunch (800-900 calories)	5-6 oz lean beef, turkey, <i>or</i> chicken 1 cup beans 1 cup corn Salad with dressing on side <i>or</i> 1 cup green vegetable 2 rolls <i>or</i> 2 slices whole grain bread
Snack (450-500 calories)	2 oz turkey jerky 1 banana 15 almonds and 3 Tbsp dried fruit
Dinner (800-900 calories)	Omelet made with 2 eggs plus 4 egg whites, ¼ cup grated low- fat cheese, and 1 cup non-starchy vegetables of choice—cook with cooking spray 3 oz lean ham on the side <i>or</i> in omelet 3 slices whole wheat toast with 1 Tbsp fruit jam on each slice 1½ cups chopped fruit
Snack (250-400 calories)	1 pack peanut butter crackers 1 scoop whey protein in 4 oz low-fat milk and 4 oz water

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