

Fueling for cyclists

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Basics...

- Cycling is an endurance sport that demands high energy that needs to be replaced by diet and supplementation during exercise
- Specific calorie needs are based on the type of cycling, duration, intensity and hours spent
- One hour of cycling may burn more than 600 calories per hour

Carbohydrates

- Needs range from 3-12 gm carbs/kg body weight depending on training load and overall goals
- Extreme training (>4-5 hrs. per day) needs 8-12 gm carbs/kg body weight
E.g. A person weighing 176 lbs. (~80 kg) for extreme training needs 640 – 960 gm carbs per day
- Moderate to heavy training (1-3 hrs./day) needs 6-10 gm carbs/kg body weight
E.g. A person weighing 176 lbs. (~80 kg) for moderate to heavy training needs 480 – 800 gm carbs per day
- Moderate duration and intensity training (~1 hr./day) needs 5-7 gm carbs/kg body weight
E.g. A person weighing 176 lbs. (~80 kg) for moderate duration and intensity training needs 400 – 560 gm carbs per day
- Low intensity or skill-based activities (<1 hr./day) needs 3-5 gm carbs/kg body weight
E.g. A person weighing 176 lbs. (~80 kg) for low intensity or skill-based activities needs 240-500 gm carbohydrates per day

Carbohydrate serving sizes

Carbohydrate foods	Serving Size (1 serving = 15 grams of carbohydrate)
Bread	1 slice
Tortilla	One, 6 inches
Corn	½ cup
Mashed potatoes	½ cup
Baked or sweet potato	½, medium
Rice	1/3 cup
Popcorn	3 cups
Apple	1, small
Grapes	15
Tangerine	2
Raisins	2 tablespoons
Orange juice	½ cup
Milk or yogurt	1¼ cups

Protein

- Protein needs range from 1.2 gm/kg body weight to 2.0 gm/kg body weight again depending on training status, training period and other special circumstances

E.g. A person weighing 176 lbs. (~80 kg) needs 96-160 gm of protein/day

- Timing of protein intake is important for building muscle mass
- Eat protein with carbohydrates within first hour after training to provide needed amino acids (the building blocks of protein) to muscles for repair and growth
- Aim to eat protein about every 3 hrs. during the day including 1 hr. before bed
- Caution: Eating more protein than recommendations will not build muscle faster or add extra muscle mass

Protein serving sizes

Protein Foods	Serving Size (1 serving = 7 grams of protein)
Cheese	1 ounce
2% milk	1 cup
Plain yogurt	1 cup
Cottage cheese	¼ cups
Egg	1 (whole)
Beef, pork, chicken, turkey, or fish	1 ounce
Tofu	¼ cup
Nuts, seeds	2 tablespoons
Peanut butter	2 tablespoons
Black beans or kidney beans	½ cup, cooked

Fat

- Add healthy fat to ensure adequate fuel to support your training and help with absorption of fat soluble vitamins (A,D,E,K)
- Fat intake should range from 20-35% of total calories. 1 gm of fat provides 9 calories

E.g. A person who needs ~2000 calories per day should get 400-700 calories from fat which is ~ 44-78 gm fat per day

- The amount of fat needs increases as training volume increases
- There are no performance benefits to a very high-fat or a very low-fat diet
- Decrease intake of saturated fats – high-fat meats (ribs, wings), creamy sauces, gravies, biscuits, croissants, doughnuts, pastries and baked/packageged foods

Hydration

- Drinking fluids can help avoid dehydration and improve performance
 - Plan to drink ~2 cups (16 oz.) of water or sports drink 2-3 hrs. before start time
 - During competition prevent excessive dehydration
 - Consume sufficient fluids to limit total body fluid losses to <2% of your body weight
 - Dehydration occurs when your sweat weight loss is 2% or more of your starting body weight. So weight yourself before and after practice to know if you are well hydrated
- Remember: The only weight you loses during a training session is water weight and not muscle or fat tissue**
- Goals also are based on individual sweat rate, training status, temperature and humidity, intensity of activity and duration
 - Drink fluids with electrolytes when temperature and humidity are high
 - Drink sports drinks with carbohydrates, sodium and potassium when you have long training sessions
 - Monitor frequency of urine and color to determine if dehydrated. If urinating frequently and the color is light-straw or lighter, it means well hydrated

• Pre-Exercise Eating

- ✓ Meal timing: 3-4 hrs. before exercise to allow time to digest
- ✓ Meal composition: High in low-glycemic carbohydrates (200-300 gm) and lean protein, low in fiber and fat
- ✓ Meal hydration: Four hours before activity, consume 2-3ml/lb. of your body weight or 17-20 Oz. water or sports drink
- ✓ Snack timing: 1-2 hour before an event or training session or 1-2 hours in between events
- ✓ Snack composition: High in carbohydrates (1 gm/kg of your body weight x no. of hours before an event), moderate in protein (~30 gm), low in fiber and fat
- ✓ Snack hydration: 5-10 Oz. water or sports drink

• During-Exercise Eating

- ✓ Carbohydrate intake should begin shortly after the onset of the activity. E.g. Sports drinks or other sports products like gel packets, gum packets, energy chews, sport beans OR foods like fruit, dried fruit, pretzels, crackers or carbohydrate-only granola bars.
- ✓ For events 1-2.5 hrs.: Consume 30-60 gm carbohydrates per hour spaced every 15-20 min
- ✓ For events longer than 2.5 hrs.: Consume 90 gm carbohydrates per hour spaced every 15-20 min
- ✓ Hydration: Depends on sweat rate. 5-10 Oz. water or sports drink every 15-20 min

• Post-Exercise Eating

- ✓ Snack timing: Within 30 min post event or training session or 1-2 hours in between events
- ✓ Snack composition: High in carbohydrates (1-2 gm/kg of your body weight), high in protein –aim for 15-30 g protein
- ✓ Meal timing: 2 hrs. after event
- ✓ Meal composition: High in low-moderate glycemic carbohydrates (1-1.5 g carbohydrates/kg body weight), lean protein, low in fiber and fat
- ✓ Hydration: 16-2 Oz water or sports drink for every pound lost during the event.

Foods not recommended

- **Pre-Exercise Eating**

- ✓ High-fat foods (high-fat meats, heavy sauces/creams, fried foods, butter foods, desserts)
- ✓ High-fiber foods (cruciferous vegetables, whole grains extremely high in fiber, beans)
- ✓ Carbonated beverages
- ✓ Sugary beverages
- ✓ Alcohol

- **During-Exercise Eating**

- ✓ Low-glycemic carbohydrates (high-fiber whole grains)
- ✓ High-fat foods (high-fat meats, heavy sauces/creams, fried foods, butter foods, desserts, large quantities of nut butters, nuts, seeds)
- ✓ High-fiber foods (cruciferous vegetables, whole grains extremely high in fiber, beans)
- ✓ High-protein foods (meats, dairy, high-protein energy bars)
- ✓ Fluids containing more than 8% carbohydrates like juice, soda, sweet tea, energy drinks, etc.)
- ✓ Alcohol

- **Post-Exercise Eating**

- ✓ High-fat foods (high-fat meats, heavy sauces/creams, fried foods, butter foods, desserts, large quantities of nut butters, nuts, seeds)
- ✓ High-fiber foods (cruciferous vegetables, whole grains extremely high in fiber, beans)
- ✓ Fluids containing more than 8% carbohydrates like juice, soda, sweet tea, energy drinks, etc.)
- ✓ Alcohol

Endurance Athlete Sample 1-Day Menu (4,500 calories)

Pre-Workout Snack (200-250 calories)

- 1 energy bar

Breakfast (1000-1100 calories)

- 4 eggs scrambled (or can substitute 1 whole egg plus 3 egg whites)
- 1 tablespoon olive oil, for cooking scrambled eggs
- ¼ avocado
- 1 whole wheat bagel
- 2 tablespoons peanut butter
- 2 tablespoons jelly
- 1 cup strawberries
- ¾ cup low-fat yogurt
- 24 ounces coffee, for cappuccino
- 8 ounce 1% milk, for cappuccino

Morning Snack (300-400 calories)

- Shake made with 1¼ scoops whey protein powder
- 1 banana, for shake
- 8 ounces orange juice, for shake
- 4 ounces 1% milk, for shake

Lunch (800-900 calories)

- 6 ounces chicken, grilled
- 1 cup cooked black beans
- 1 cup corn, cooked
- 1 cup broccoli, cooked
- 2 slices whole grain bread
- 1 tablespoon margarine, soft tub

Afternoon Snack (450-500 calories)

- 3 ounces turkey jerky
- 1 banana
- ¼ cup almonds
- ¼ cup dried fruit

Evening Meal (800-900 calories)

- Omelet made with 2 eggs
- 4 egg whites, for omelet
- ½ cup grated low-fat cheese, for omelet
- ½ cup mushrooms, for omelet
- ½ cup green peppers, for omelet
- 3 ounces lean ham
- 3 slices whole wheat toast
- 1 tablespoon fruit jam on each slice
- 1 ½ cups chopped fruit

Evening Snack (250-400 calories)

- 1 package peanut butter crackers (6 sandwiches)
- 1 scoop whey protein, mixed with milk water
- 8 ounces 1% milk

Endurance Athlete Sample 1-Day Menu (2,500 calories)

Breakfast (500 calories)

- ¾ cup low-fat cottage cheese
- 1½ cups diced cantaloupe, added to cottage cheese
- 1 slice whole wheat toast
- 1 tablespoon honey, for toast
- 1 tablespoon peanut butter, for toast

Morning Snack (250-300 calories)

- 1 granola bar
- 1 apple
- 8 ounces 1% milk

Lunch (500 calories)

- 2 slices whole wheat bread, for sandwich
- 3 ounces ham deli meat, for sandwich
- 1 slice low-fat cheese, for sandwich
- 2 lettuce leaves, for sandwich
- 2 tomato slices, for sandwich
- 1 teaspoon mustard, for sandwich
- 15 pretzels
- ¾ cup nonfat Greek yogurt
- 1 small orange

Pre-Workout Snack (300 calories)

- 5 crackers, whole wheat, reduced-fat
- 1 low-fat string cheese
- ¾ cup light yogurt
- ¼ cup whole grain cereal, mixed into yogurt

Post-Workout Snack (300 calories)

16 ounces low-fat chocolate milk

Evening Meal (500 calories)

- 1 cup cooked pasta
- 3 ounce chicken breast, added to pasta
- ½ cup marinara sauce, added to pasta
- 2 cups broccoli, cooked
- 1 dinner roll, whole-wheat

Evening Snack (150 calories)

- 1 cup berries
- 2 tablespoon almonds

Thank you!!!