

# ACTIVE NUTRITION FOR CYCLING

Cycling is an endurance sport that places high demand on the cardiovascular system and skeletal muscles. The fueling needs of cyclists can be highly individualized based on the type of cycling: road cycling, mountain biking, cyclocross and more.



## MEET PETE MORRIS

A professional cyclist who races for Team CLIF Bar Cycling. Pete's recent shift in work to an office job at a cycling application company has required him to adapt his training schedule and his nutrition to match his new, less active work week.

## Performance Priorities: Fueling Basics

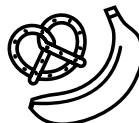
### Carbohydrate



Carbohydrate is the main nutritional focus for cycling, particularly when racing. It is needed before (to be stored in the muscles as glycogen to provide fuel to working muscles), during (for immediate energy needs) and after exercise (to replenish used muscle glycogen).

- **One to four hours before** a ride, consume a meal or snack with **2-4 grams** of carbohydrate/lb body weight, to ensure glycogen stores are full.
- Training doesn't stop when activity stops. In addition to carbohydrate, ensure your **post-exercise snack or meal** includes **25-30 grams of protein** to encourage muscle growth and repair.

### On the Bike



Nutrition on the bike may come in a variety of forms:

- For long races or training rides, tape gels or small pieces of a sports bar to your handlebars, or tuck them into jersey pockets for immediate fuel while you ride. Aim to take in **30-60 grams** of carbohydrates every hour.
- Plan your route before you ride and identify fueling spots or water stops along the way. **Pack a carbohydrate-rich snack with protein** and extra water in case unexpected hunger/thirst hits or you're out for longer than planned. For snacks, choose portable options like:
  - o A banana
  - o Pretzels
  - o Peanut butter and jelly sandwich
  - o Trail mix
  - o CLIF® Bloks

### Hydration



Dehydration can lead to a significant drop in performance. To prevent dehydration, cyclists should always carry a water bottle with them on rides.

- For rides lasting one hour or less, water is the best way to stay hydrated.
- While riding, drink enough fluid to match your intensity and sweat loss from hot weather — drink **3-8 ounces** of fluid every 15-20 minutes.<sup>1</sup>
- For rides lasting more than one hour, consider adding an additional water bottle with a sports drink to replace the sodium, potassium and magnesium lost in sweat. Alternate sipping between both water bottles to maintain energy levels.

*"With a new job, my longer, daily training sessions have been replaced with more meetings and office work. I eat according to what kind of exercise I have planned for that day, which may vary depending on when my ride is scheduled. One of my biggest nutrition considerations for cycling is to properly fuel before exercise. Trial and error will help you get your pre-ride nutrition right."* — **PETE**

## Want a training day nutrition plan?

Work with a registered dietitian to use the **Active Nutrition Guide** at [www.clifbar.com/activenutritionguide](http://www.clifbar.com/activenutritionguide) to develop a personalized training day nutrition plan.

Ideas and suggestions are provided for general educational purposes only and should not be construed as medical advice or care. The contents of this resource are not intended to make health or nutrition claims about Clif Bar & Company products. Always seek the advice of a physician or other qualified health provider before beginning any physical fitness or health and nutrition related activity.

## PRO TIP

Consider time spent getting ready for your ride, pumping your tires, stopping at intersections, waiting for the group, etc. to determine your true length of exercise. **Your pre-ride fuel and post-workout meal should reflect the amount of time you're physically riding.**

# PERSONALIZED ACTIVE NUTRITION FOR CYCLING

Cyclists have specific day-to-day nutrition needs based on the intensity, frequency and duration of their training. The following steps can help you develop your athlete's own personalized nutrition plan.



The following content is to be used by a nutrition professional. Consult a registered dietitian to determine your individual nutrition needs.

## STEP 1: Calculate Energy Needs

Energy needs for cyclists will vary substantially based on speed, body weight, training distance and intensity. Total daily energy expenditure (TDEE) takes into account resting metabolic rate (RMR) and physical activity level, while TDEE plus energy expended during purposeful exercise determines total energy needs.

### TDEE = RMR x Physical Activity Level (PAL)\*

RMR for males (kcal/day) = (9.99 x weight in kg) + (6.25 x height in cm) – (4.92 x age in yrs) + 5

RMR for females (kcal/day) = (9.99 x weight in kg) + (6.25 x height in cm) – (4.92 x age in yrs) – 161

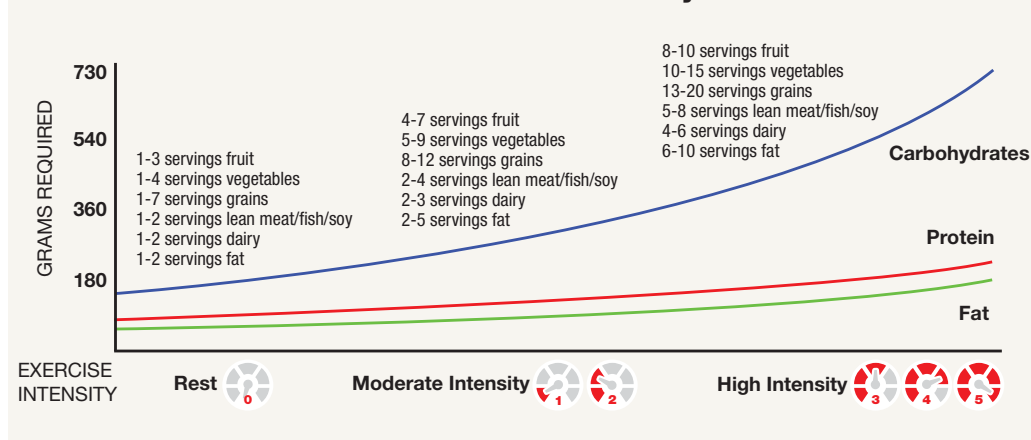
### Total Energy Needs = TDEE + Calories Used During Exercise

\*Refer to the PAL factor table in the Active Nutrition Guide at [clifbar.com/activenutritionguide](http://clifbar.com/activenutritionguide) for guidance.

## STEP 2: Create a Custom Meal Pattern

Use the calculated energy needs to create a personalized nutrition plan. As activity duration and intensity change, so do food and beverage needs. Carbohydrate, fat and protein needs will vary each day based on individual goals, activity length and intensity – adjusting meals, snacks and recovery nutrition for the day's needs will help optimize energy and performance.

### Macronutrient Needs Based on Exercise Intensity



### Meal Pattern Recommendations

(servings/day)

#### CARBOHYDRATE

50-65% of total calories

- \_\_\_ Fruits
- \_\_\_ Vegetables
- \_\_\_ Grains / Starch

#### PROTEIN

10-20% of total calories\*

- \_\_\_ Lean Meat / Fish / Soy
- \_\_\_ Dairy
- \_\_\_ Legumes / Beans

\* Up to 30% may be beneficial for some individuals.

#### FAT

20-35% of total calories

- \_\_\_ Oils
- \_\_\_ Nuts / Seeds

#### SPORTS FOODS

- \_\_\_ Sports Drinks
- \_\_\_ Chews
- \_\_\_ Gels
- \_\_\_ Bars

For more information on developing personalized, periodized meal plans, and for additional athlete examples, visit [clifbar.com/activenutritionguide](http://clifbar.com/activenutritionguide) to download the **Active Nutrition Guide**.



### Author Bio

Mike Ormsbee, PhD, CSCS, FISSN, FACSM is the Associate Director of the Institute of Sports Sciences and Medicine at Florida State University. He has a PhD in Nutritional Bioenergetics, degrees in Exercise Physiology and Sports Nutrition, and frequently competes in cycling and triathlon races.

<sup>1</sup>American College of Sports Medicine. Selecting and Effectively Using Hydration for Fitness. Retrieved from <https://www.acsm.org/docs/brochures/selecting-and-effectively-using-hydration-for-fitness.pdf>.

<sup>2</sup>Campbell, C., Prince, D., Braun, M., Applegate, E., & Casazza, G. a. (2008). Carbohydrate-supplement form and exercise performance. *Int J Sport Nutr Exerc Metab*, 18(2), 179-190.

<sup>3</sup>Rustad, P. I., Sailer, M., Cumming, K. T., Jeppesen, P. B., Kolnes, K. J., Solli, O., Jensen, J. (2016). Intake of protein plus carbohydrate during the first two hours after exhaustive cycling improves performance the following day. *PLoS ONE*, 11(4), 1-25.

<sup>4</sup>Institute of Medicine (2005) Dietary reference intakes: For energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein and amino acids. Washington, D.C.: National Academy Press.

<sup>5</sup>U.S. Department of Health and Human Services (2008). Physical activity guidelines for Americans. Retrieved from <https://health.gov/paguidelines/pdf/paguide.pdf>.