

Nutrition Q&A: Top 10 Must Reads for Mountain Climbers

- 1. I'm committed to a climb that is six months from now. I'm beginning to train for this climb and I want to know what to eat. What foods, if any, should I start cutting out of my daily diet and what foods can I eat that will help?**

Mountain climbing is a serious undertaking. It requires you to be in peak physical condition on summit day. Six months beforehand is not too soon to get started! Well-prepared climbers share a strong nutritional foundation. The foods they eat supply enough nutrients and calories to meet their every-day nutritional needs *and* fuel daily workouts. In other words, successful climbers eat in a way that sets them for what is really needed--and that's *Vitamin T*, as in *Training*.

Opt for a carbohydrate-rich diet built on nutritional powerhouses like whole grains (brown rice, oatmeal and whole wheat bread) and beans/lentils (chili, lentil soup, bean burritos) and low-fat milk and yogurt. Add quality protein like lean red meat, poultry (skip the skin), eggs and plenty of omega-3 rich fish (at least two servings a week). Load up on powerful antioxidants, which naturally promote good health and boost your immune system, by eating two cups of fruit and three cups of vegetables daily. Avoid or limit foods such as alcohol, soda, fatty meats and super-sized desserts that squeeze out the healthier foods your body needs to tolerate strenuous workouts, bolster your immune system and build lean muscle mass.

How you eat is just as important as what you eat. Plan ahead and be prepared. Choose to eat breakfast, make time for lunch and sit down for dinner—every day. Schedule a regular weekly trip to the grocery store and always keep healthful snacks on hand at your desk, in your gym bag and when you travel. The bottom line: when it comes to daily food choices, the greatest benefits come from eating in a way that leaves you physically ready and mentally prepared *to train*.

- 2. I need to lose some weight before my climb. What is the best way to do this and still have enough energy to train?**

Don't count calories, make your calories count. Active people often struggle to lose weight because they skip meals or diet during the day, only to backload the calories in at night. Concentrate on timing when you eat your meals and snacks with when you exercise. Plan to exercise one to three hours following a meal so you're brain and muscles are properly fueled. Missed or sub-par workouts due to being too tired, rundown or unmotivated from poor eating habits won't help you get or stay fit.

Following exercise, you'll still want to speed your recovery by taking advantage of the "carbohydrate window." Don't rely on sports foods, like sports drinks and bars. Save those for when you really need them—during prolonged and intense exercise bouts. Instead, eat a healthy snack. Aim for real foods from two food groups—like peanut butter on an apple or lowfat yogurt and whole grain cereal. Better still, sit down to your next planned meal.

Remember, fitness leads to leanness. Losing weight does not automatically lead to improved fitness. To reach the leanest weight that's healthy for your body, eat balanced meals and snacks and focus on training consistently. The following tips can help active people trim calories and keep training:

1. Limit or eliminate “liquid calories:” alcohol, soda, vitamin waters, flavored coffee drinks, energy drinks/shakes and super-sized fruit juices and smoothies.
 2. Be smart with sports foods (energy bars, gels, Bloks and drinks): If you’re not training at a moderate intensity for at least 60 to 90 continuous minutes, you don’t need to supplement with sports foods before or during exercise. If you’re not working out that day, you don’t need them at all.
 3. Cut the fat, not the fun: It’s tempting to try to avoid all sweets and other high-fat treats when weight loss is the goal. Get too hungry or feel deprived, however, and it doesn’t work. For the long haul, build in modest servings of your favorite “fun foods” at least three times a week. Enjoy at the end of a meal, not on an empty stomach.
- 3. On the actual climb, I’m going to be pushing myself for long periods of time as I’ve heard that breaks are only taken about every 1½ hours. How many calories do I need to be eating so I can stay strong throughout the entire climb?**

The energy needs of climbers vary tremendously. During the climb, your size, gender, fitness level and how hard you are working (intensity) all influence how many calories you need. During prolonged exercise, like mountain climbing, the body relies on a combination of carbohydrate and fat to fuel working muscles and the brain. This fuel primarily comes from the bodies’ own stores—liver and muscle glycogen (stored carbohydrate) and triglycerides (fat) stored within muscle fibers and as body fat.

The body’s capacity to store carbohydrate, however, is limited. (It improves as you train and become fitter, as does your ability to burn fat for fuel.) Climbers need to consume a steady supply of carbohydrate-rich foods and drinks throughout the climb to help to delay muscle glycogen depletion and prevent hypoglycemia, a too-low blood sugar level. The following guideline applies to all climbers—eat (and/or drink) a minimum of 30 to 60 grams of carbohydrate (or 100 to 250 calories from carbohydrate) per hour while climbing. In the latter stages of long climbs, 60 grams or more of carb per hour is often needed.

On multiple day climbs, it’s also critical to start replenishing the body’s glycogen stores as soon as you stop climbing for the day. Choose carb-rich foods first, like energy bars, dried fruit or instant oatmeal. Additional energy or calories at meals (and planned breaks, too) can come from any source (carb, protein or fat). Choose foods you like and that are well tolerated.

- 4. What can I eat to help deal with the cold temperatures? Does eating high-fat food help? If “fatty” foods do help—which ones are best and when should I start eating them?**

Cold-weather athletes and experts alike continue to debate the merits of a high-carbohydrate diet versus a diet higher in fat during prolonged cold-weather adventures. Credible studies are limited, but the findings suggest we metabolize or burn both carbohydrate and fat at a higher rate when we exercise for extended periods in the cold. Get the bulk of your calories from carbohydrate-rich foods, however, as the boost in carbohydrate metabolism is far greater than the increase in fat metabolism. Keep in mind that fitter and better cold-acclimatized athletes burn more fat (relative to carbohydrate) during exercise which helps conserve the body’s limited glycogen reserves.

Even more important than the actual source of calories, however, is the timing of meals and snacks. Feed the furnace. Consume carb-rich drinks and foods at regular intervals starting early in the climb. In addition to hard-working muscles, your brain relies exclusively on

glucose (sugar) for fuel. Without a steady supply of glucose (supplied by liver glycogen and carb-rich foods you eat while climbing) your judgment and ability to perform skillful maneuvers can severely deteriorate, putting you and others at risk. At planned breaks and mealtimes, include high-calorie foods, including nuts, chocolate and cheese, and warm beverages (if possible) to meet elevated calorie needs and boost morale.

The bottom line when exercising in the cold: be in good physical condition, wear proper clothing and eat enough calories (regardless of the source) to maintain your body temperature. Lastly, climbers with low blood iron levels may be more susceptible to the cold. It can take 4 to 12 weeks (or longer) to boost low iron stores. Confirm with your medical provider before taking iron supplements. Excess iron can be harmful and it won't enhance your cold tolerance if you're not deficient.

5. If I'm "hitting the wall" during the climb are there any good foods I can eat that will help to quickly turn things around?

When muscle glycogen stores become depleted during exercise, commonly referred to as "hitting the wall," your muscles lack the fuel they need. As their ability to handle intense work diminishes, fatigue takes over and you're forced to slow your pace. For a rapid energy boost, immediately reach for quick-acting, easy-to-digest simple carbohydrates—such as sports drinks, energy gels (take with water) and sport chews, glucose tablets, or sugary candy. Just as important is to eat something more substantial (250-500 calories) as soon as possible.

Once you've "hit the wall," realize that you need to do even a better job of staying in energy balance during the actual climb. You often will be able to continue and complete the climb, however, not with the desired performance. That's because food alone can't totally fix the problem. Your training, or lack thereof, improper pacing and general fatigue all contribute to this phenomenon.

6. I try to avoid bathroom stops as much as possible when I climb, especially when it's cold. What's the minimum amount I need to drink while climbing to avoid becoming dehydrated? Is plain water the best option?

Don't be fooled—dehydration hinders your ability on cold-weather climbs just as it does in the heat. In the cold, climbers lose water through their breath (expired air is saturated with water) and via sweating, especially if overdressed. To conserve heat, the body also directs more blood to its core, away from hands, feet and ears. This causes a rise in blood pressure, inducing you to urinate and lose fluid. On top of that, climbers often simply don't drink enough because of feeling less thirsty in cold weather and the challenge of keeping drinks from freezing.

Fluid needs vary widely among climbers because of varying sweat rates. A general rule of thumb is to drink a minimum of two quarts (64 ounces) during a daylong (six-hour) climb. Drink small amounts at regular intervals—ideally a few ounces (gulps) every 15 to 20 minutes. To figure out if you're drinking enough, monitor your ability to urinate (you should be able to urinate every few hours) and the color of your urine. It should be pale yellow, not as clear as water or dark yellow like straw.

Sports drinks, sweetened teas, apple cider, cocoa and soups/broths can be better choices than water. These drinks provide extra energy (as carbohydrate) and electrolytes (sodium being the most important). Avoid alcohol! Although you may feel warmer when

you first drink alcohol, your core body temperature doesn't rise. In fact, by opening the blood vessels to your skin, alcoholic drinks will actually cause you to lose heat.

7. I do really well just eating energy gels on shorter hikes and climbs – do you recommend climbers rely only on energy gels to fuel themselves to the summit of a big mountain like Mt. Rainier? If not, what foods should climbers supplement with?

The typical energy gel provides 20 to 24 grams (80 to 100 calories) of fast-acting, easy-to-digest carbohydrate—your body's preferred source of fuel during strenuous exercise. Many elite athletes rely on energy gels during endurance activities, such as mountain climbing. On longer climbs, however, energy gels (as well as Bloks and other sports chews) alone won't be enough for most climbers. First, you'll need to carry enough with you to last the entire climb and be willing to consume one to four packets an hour. You'll also need to be disciplined to take them with enough water (4 to 8 ounces), otherwise, your body can't digest and absorb them rapidly.

"Flavor fatigue" is also a real concern on long climbs, especially at higher altitudes. Drinks and foods taste increasingly sweet. As time passes, you'll find it harder and harder to consume previously well-tolerated and liked foods and drinks—even your favorites.

To meet the increased energy demands of climbing two or more days in a row, climbers need to be prepared, as much as possible, with a host of foods. Include bland and salty-flavored options, so hopefully at least one food item is always appealing. Some popular foods for climbers include: peanut butter or cheese and crackers, peanut butter sandwiches, salted small potatoes or hard boiled eggs, jerky, nuts, trail mixes, breakfast bars and cookies. Have available several different flavors of sports drinks, energy bars and other sports foods to choose from.

8. I find it really hard to eat on long hikes and climbs. I lose my appetite and nothing looks or sounds appealing. How much of a problem will this be on a two day climb?

Climbers are wise to hold off on big mountain climbs until they've mastered eating and drinking enough on shorter climbs. The longer the climb the more important it is to meet fluid and fuel needs. At the same time, it also becomes more challenging. Climbers struggle to eat and drink enough due to increasing fatigue (mental and physical), harsher weather conditions, and the effects of high altitude. Adding to that are logistical matters like fewer food options to choose from and fewer opportunities to eat.

It's common to lose one's appetite during strenuous, prolonged exercise—so be prepared. Use shorter climbs to train your stomach and your mind, as much as possible, on what to expect. Experiment with equipment, like insulated bladders and water bottles and various foods to figure out what works best in hot weather and in the cold. Be open to suggestions from more experienced climbers. Use shorter climbs to practice, practice, practice!

9. I've heard that marathon runners and Ironman triathletes need to carbohydrate-load before their races, but what about mountain climbers? Will

carbo-loading before my climb really help? Is 24 hours in advance enough time?

Mountain climbers definitely benefit from carbohydrate-loading, especially before multiple-day climbs. Carbo-loading will not help you climb faster, but, it can help you maintain your pace longer before tiring. Super-loading your body's glycogen stores can increase your endurance by up to 20 percent.

To get the benefits of carbohydrate-loading before a big climb, you'll need to work on two fronts. First, reduce your workouts, perhaps even resting completely for one to three days prior to the climb. Otherwise, the dietary carbs you hope to stockpile for the long climb can simply be used to fuel these last exercise sessions. At the same time, eat a high-carbohydrate diet (up to 5 grams of carbohydrate per pound of body weight), beginning *three days* before your climb.

Since you'll be exercising less, carbo-loading doesn't mean eating enormous amounts of extra food. The key is to fill up on carb-rich foods not fat: fig newtons and breakfast bars instead of doughnuts, pasta with red sauce instead of cheese-laden lasagna, and extra rice, bread or another bowl of oatmeal versus candy bars and chips. Concentrate on eating three meals and two to three snacks daily, especially on travel days. Beverages like 100% fruit juice, lowfat milkshakes, fruit smoothies and meal replacement beverages can easily supply extra carbohydrates.

10. I've never climbed higher than 10,000 feet. What are the best foods to eat if I'm having trouble dealing with the altitude? Can I eat certain foods to prevent altitude sickness?

Those climbers who do best at altitude are those who drink and eat the most—and doing that essentially takes a lot of willpower. Remember, being dehydrated and underfueled not only puts you at risk. It also threatens your companions' safety and enjoyment. Obviously, acclimatizing to altitude is best, as is being fit enough to keep pace set with your group.

From a nutritional standpoint, consume plenty of iron-rich foods in the months leading up to the climb. Optimize your body's prime carriers of oxygen--hemoglobin in red blood cells and myoglobin in muscle cells. Heme iron from animal sources (all meats, but especially red meat) is best absorbed. Other options include: fortified breakfast cereals, dried beans (legumes), dark green leafy vegetables and prune juice. The need for supplementation can be easily determined through routine blood tests.

Start the climb hydrated and well fueled. Drink on a regular schedule while climbing—a few gulps every 15 to 30 minutes. If need be, set your watch alarm as a reminder. Don't rely on plain water. You need to consume electrolytes, too, with sodium being the most important. Sodium helps the body hold on to the fluids we drink. That's another reason climbers need to drink and eat despite the nausea, malaise and loss of appetite associated with acute altitude, or mountain, sickness. Electrolyte replacement drinks and some energy gels provide sodium, but it's the meals and snacks we eat along the way that supplies the most.

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