

## Preparation for an Alpine Ascents' Mount Everest Climb

To reach the summit of Everest (29,035'/8850m) you must be in top physical, emotional, and psychological condition. Benchmarks for physical conditioning include successful previous trips above 20,000' whenever possible, during which you will have gained experience dealing with gear and equipment, handling extremely cold temperatures and extreme altitude, gaining solid cramponing skills both on and off rock, snow and ice, rappelling with a pack on, and using ascenders and jumars on a fixed line. In addition to solid alpine living, snow, and ice climbing skills, you need significant strength endurance, high-altitude tolerance, and strong cardiovascular conditioning.

Keep in mind that just because you exercise regularly at significantly lower elevation does not mean you have suitable conditioning needed to stand on top of the world. Plenty of people who have the endurance to run marathons and compete in triathlons fail to thrive even at base camp. Cardiovascular fitness is simply not enough. You should focus on building physical conditioning at lower altitudes necessary to ascend 4,000 feet of elevation on successive days carrying 50-60 pounds. Although you will not be carrying such weight on Everest, by conditioning your body to that degree of high tolerance you will have built extra reserves that will serve you very well on the mountain as you inevitably start to lose musculature and bodyfat from being at extreme altitude for 2 months. This extra reserve will also make it possible to focus on the many, many other components involved in a climb of such extremes, rather than dealing with the added harsh reality that your physical preparation may have been somewhat less than adequate.

Prioritize your training efforts in the following way, assuming that you are in good health and injury-free:

1. Climbing conditioning – pack-loaded uphill hiking, walking, and stair climbing
2. Strength training for the lower body and core
3. Cardiovascular training, including both aerobic and anaerobic workouts with and without pack weight
4. Flexibility training

Most people will need to train specifically for their climb of Everest for at least a year, building up from a solid baseline of fitness for the last 6-9 months. During your training, you will need to progressively ramp up your hike time, distance and elevation gain (at roughly 10% per week) to safely and effectively build your climbing-specific conditioning. Trying to rush this will increase the risk of experiencing some sort of training injury and not being ready for your trip. Below are more details of how to incorporate these four priorities into your training program.

**Climbing conditioning** - Hike along outdoor trails, gradually increasing your pack weight until you feel comfortable carrying a 50-60 pound pack. If you live where it is relatively flat, go up and down stairs or train on an inclined treadmill or stairmaster. Use whatever varied surface terrain (i.e. gravel beds, sand dunes, river banks) you have access to. A reasonable goal would be to ascend 4,000 feet carrying an average pack of 50 pounds in a 2-3 hour period, or roughly 1,500 vertical feet per hour. A good training option for pack weight is to carry water in gallon containers or collapsible jugs, so you can dump water at the top as needed, to lighten the load for the descent.

In early season, you should be comfortable gaining 2000' elevation over 5-7 miles round trip, with a 30-40 pound pack; each hike try adding 3-5 pounds until you are comfortable with a 55-pound pack, then begin increasing the total elevation gain and mileage. When you can gain 4,000 feet while carrying a 60-pound pack, start decreasing rest breaks and increasing speed on each conditioning workout. A month from your climb, you should be comfortable hiking on successive days with at least 60 pounds on one of those outings.

Two training techniques that will be useful for extreme altitude climbing are 1) interval training and 2) back to back training (discussed in more detail in *“Putting it all together”* below.) To include interval training, find a steep hill or sets of stairs that will allow you to climb steadily for 1-3 minutes. Push as hard as you can going up, then recover coming down, and repeat for anywhere from 20-60 minutes depending on how close to your climb you are. Gradually add weight to your pack (no more than 10% per week) until you can carry 60 pounds the entire time. If possible, participate in as many hikes at altitude – and in winter conditions -- as you possibly can to learn how your body reacts in extreme cold and above 13,000 feet elevation.

**Strength conditioning** - Training with free weights, bands, a backpack, bodyweight exercises, or gym machines will help you build overall strength, particularly in the core (lower back and abdominals), upper back and shoulders, and legs. Developing strength in your upper back and shoulders will help you with such tasks as carrying your pack and using trekking poles effectively. The calves, hips, quads, hamstrings and glutes are all involved in ascending and descending steep, hard-packed snow and ice slopes, and a great degree of strength endurance is required in all areas of the legs and hips, especially during those segments when exposure is extreme and adrenaline is high, such as going through the Khumbu Ice Fall area.

Training primarily with free weights will give you the functional, climbing-specific strength that will help you most in the mountains. Free weight-training requires that you balance the weights as you would your own body, weighted with a pack, in three-dimensional space. When starting any strength conditioning program, complete two full-body strength workouts a week for 45-60 minutes each, focusing on compound exercises such as squats, lunges, step-ups, dips, pull-ups, rows, dead lifts, bench presses, pushups, and overhead presses. While mountaineering traditionally uses more lower body, Everest requires significant amount of upper body strength, as well, through the Khumbu and on fixed lines.

In the beginning phase of strength conditioning, focus on building a foundation for harder workouts; to that end, keep the weight light enough to concentrate on good form and complete 2 sets of each exercise for 8-10 repetitions. As you continue to train, you will shift focus to building strength (generally lower reps 5-8 with heavier weight). 4-6 weeks before your climb, shift your training to focus on strength endurance (higher reps 10-15 with light weight) to turn the newly gained strength into greater strength endurance. Each training phase should vary the weight used, repetitions completed, number of sets, and rest intervals. Regardless of training phase, always be sure you maintain proper form in order to prevent injury or strain.

**Cardiovascular conditioning** – When embarking on a cardiovascular training program for a climb as strenuous as an 8000m peak, you should already be at the point starting out where you are regularly including 4-6 weekly aerobic sessions of sustained effort for at least an hour each. Include spinal-loading aerobic training such as trail running, walking on an inclined treadmill, doing stair stepping or step mill training, jogging, working on an elliptical machine, walking up and down hills, or participating in step aerobic classes. Reserve 1-2 days per week for pack endurance training (2-6 hours), 1-2 day per week for high intensity intervals (30-60 minutes) and the other 1-2 per week for general cardiovascular fitness (60-90 minutes). Get as much experience on all sorts of varied terrain as you can, including (as strange as it sounds) walking in crampons on rocks. Be sure to include a 5-10 minute warm-up at reduced intensity before working at your target heart rate for the day, and cool down with 5-10 minutes of appropriate stretching.

**Flexibility conditioning** – Be sure to include at least 5-10 minutes of targeted stretching following every workout, specifically for the hamstrings, glutes, hips, calves, forearms, lower back and quadriceps. If you have any areas of concern early season, add emphasis to making sure you have normal range of motion about all your joints. This will become even more important as you add weight and distance to your conditioners.

**Putting it all together --**

Roughly a month before your climb, you should be at the conditioning level where you are comfortable hiking on consecutive weekend days, what is referred to as *Back-to-Back training*. This involves hiking with your target climb pack weight (60 pounds) on the first day for at least 3,000' gain, and a somewhat lighter pack (40 pounds) for greater mileage, elevation gain, or both on the second day to simulate the back-to-back requirements of long days on your trip. This will not only be helpful physically but also prepare you psychologically for the challenge of repeat high-

Day	Climbing Specific	Strength	Cardio	Flexibility
Mon		(Optional) climbing gym 1	45 min. recovery level (<65% Max HR)	10-15 min. at the end
Tue	Hills, Stairs, high ramp treadmill 60 lb pack, Interval level (short bursts >85% Max HR)	Full body, 12-15 reps / set, 1 hr.		10-15 min. at the end
Wed		(Optional) Climbing Gym 75-90 minutes	75-90 min. no pack distance level (65-75% Max HR)	10-15 min. at the end
Thu		Full body, 8-10 reps / set, 1 hr.	45-60 min. no pack tempo level (75-85% Max HR)	10-15 min. at the end
Fri				
Sat	Hike 8-10 miles, 50-60lb pack, gain 3,000 feet			As needed to prevent stiffness
Sun	Hike 10-12 miles, 40lb pack, gain 4,000 feet			As needed to prevent stiffness

effort days without significant recovery days in between. A sample week of training *a month prior to your climb* might look like the chart above, in an effort to help you build as much stamina as possible.

Be sure to include at least one recovery day per week and listen closely to your body. Take the final two weeks to taper or gradually reduce intensity and volume of training so that by the time you leave for your trip you are packed, well-nourished, well-rested and physically and psychologically up to the challenge of a lifetime.

You can find additional training resources at [www.BodyResults.com](http://www.BodyResults.com) for the following:

- Training Articles
- Training Books and DVDs
- Customized Online Mountaineering Specific Training

Special discounts are available for Alpine Ascents Customers at the page [www.BodyResults.com/aa](http://www.BodyResults.com/aa)

*This training information was provided by Wilderness Sports Conditioning experts Courtenay and Doug Schurman of BodyResults.com. They are the exclusive conditioning resource for Alpine Ascents. They oversee all client training, are co-authors of the book, The Outdoor Athlete (2009) and are creators of the Train To Climb Mt Rainier DVD.*