

## Preparation for Alpine Ascents' Mountaineering School – Denali Prep Course

Mountain Climbing is a serious undertaking. Just because you exercise regularly (4-6 times per week) does not mean you have the conditioning needed to climb a 10,000 foot or higher mountain. Plenty of people who can run a marathon fail to summit mountains without the proper training. Pure cardiovascular fitness is simply not enough. You need to be able to ascend 9-10,000 feet with substantial weight on your back. Expect to carry at least a 40-50 pound pack or more to get to base camp over 4,500 feet of gain. The ascent to the summit, comparable elevation gain to the approach, involves carrying a pack weight of about half that of your approach pack.

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 and upper body
3. Cardiovascular training, including both aerobic and anaerobic workouts without pack weight
4. Flexibility training

Most people will need to train specifically for their course for at least 4-6 months. During your training, you will need to progressively ramp up your pack weight, 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 the climb. Below are more details of how to incorporate these four priorities into your program.

**Climbing conditioning** - Hike steep outdoor trails, gradually increasing your pack weight with each outing until you are at your target climb pack weight. 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 3,500 feet carrying an average pack of 50 pounds in a 2-3 hour period, or roughly 1,250 vertical feet in an 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.

One training technique that is useful for altitude climbing is to include higher intensity interval training in your weekly program. To do this, find a steep hill or sets of stairs that will allow you to climb steadily for several minutes. Push as hard as you can going up, then recover coming down, and repeat for anywhere from 20-45 minutes depending on how close to your climb you are. Add weight to your pack on a regular basis, no more than 10% per week, until you can carry your target climb pack weight the entire time.

In early season, you might start with a hike that gains up to 1500-2000' elevation over 6 miles round trip and carry a 15-20# pack; each hike try adding 2-3 pounds until you are comfortable with a 40# pack, then begin increasing the total elevation gain and mileage. When you can gain 3,500 feet with a 40# pack, start decreasing rest breaks and increasing speed, and once you reach your target time, add the final weight until you can carry your target climb pack weight for the desired elevation gain and mileage.

**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 a heavy pack, using trekking poles and ice axes effectively. The calves, hips, quads, hamstrings and glutes are all involved in ascending and descending glacier, ice, and rock routes, and strength endurance is required in all areas of the legs and hips.

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 30-45 minutes each, focusing on compound exercises such as squats, lunges, step-ups, dips, pull-ups, rows, dead lifts, bench presses, pushups, and overhead presses.

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** – Include spinal-loading aerobic training options such as jogging, walking on an inclined treadmill, doing stair stepping or stepmill training, trail running, working on an elliptical machine, walking up and down hills, or participating in step aerobic classes. While biking, rowing and swimming are aerobic options for the earliest stages of training, be sure as you get closer to your climb that you include activities suggested above that load the spine and legs the same way that hiking will.

When first beginning a cardiovascular training program, begin with three workouts (i.e. Monday, Wednesday and Friday) of 30 minutes of sustained activity at a moderate intensity, and build to 4-5 aerobic sessions of sustained effort for at least 45-60 minutes (taking perhaps Wednesday and Sunday as days off, for example.) Be sure to include a 5-10 minute gentle warm-up before working at your target heart rate for the day (for most workouts, choose a level of exertion that allows you to connect a few words together in a phrase, but leaves you feeling comfortably tired at the end of the workout), and cool down with 5-10 minutes of appropriate stretching of the muscles you use most in your activity, including lower back, calves, hamstrings, hips and quadriceps.

**Flexibility conditioning** – Be sure to include at least 5-10 minutes of targeted stretching following every workout, specifically for the hamstrings, glutes, hips, calves, 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 or course, 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 (40-50#) on the first day for at least 4,000-5,000' gain, and a somewhat lighter pack for greater mileage on the second day to simulate your approach and summit days of your climb. This will not only be helpful physically but also prepare you psychologically for the challenge of repeat high-effort days without any 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 week to taper or gradually reduce intensity and volume of training so that by the time you leave for your climb you are well rested and physically and psychologically up to the challenge.

Day	Climbing Specific	Strength	Cardio	Flexibility
Mon		Full body, 12-15 reps / set, 45 min.	30 min. recovery level (<65% Max HR)	10-15 min. at the end
Tue	Hills, Stairs or inclined machine 45-60 min., 40-50lb pack, Interval level (short bursts >85% Max HR)			10-15 min. at the end
Wed			75 min. no pack distance level (65-75% Max HR)	10-15 min. at the end
Thu		Full body, 8-10 reps / set, 45 min.	45 min. no pack tempo level (75-85% Max HR)	10-15 min. at the end
Fri				
Sat	Hike 8-10 miles, 40-50lb pack, gain 4-5,000 feet			As needed to prevent stiffness
Sun	Hike 8-10 miles, 20-25lb pack, gain 4-5,000 feet			As needed to prevent stiffness

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 Sport 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.*