

American Alpine Institute^{Ltd.}

The Physical Demands of Climbing Denali

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The process of advising and screening for more involved expeditions such as Denali is perhaps one of the more difficult administrative processes that we here at AAI undertake. This process of trying to determine that climbers both have the needed experience, are adequately prepared, and completely informed of all aspects of their will never be perfect, and there will always be folks who are turned away who could have made the climb, and people who are accepted who stand very little or even no chance at making the climb. Trying to gauge a climber's ability level and current physical condition based on their subjective summary and notes on a paper application form will never be an ideal way to evaluate preparedness for a climb like Denali. Requiring that all Denali climbers join us on a preparatory course or evaluation trip prior to Denali is unfortunately not practical and so we are left to rely on phone conversations, interviews, and application forms for most Denali climbers each year.

So the end result is that we are faced with the task of setting a minimum level of experience and then trying to do as good a job as possible of evaluating each applicant on a case-by-case basis.

Here is what we spell out with regard to prerequisites for Denali:

“Intermediate technical snow and ice climbing ability; glacier travel skills; experience with backcountry winter camping; excellent cardio-vascular condition.”

Some of these requirements are left intentionally vague because there are many different skills and experiences that could qualify someone for this trip, and or serve as the "intermediate level" of experience that we describe. We rarely accept climbers that just barely meet the minimum requirements unless they have climbed with us previously, and their guides have given them the OK for Denali. Basically what we are looking for is for climbers to be comfortable using their ice axe and crampons on snow and ice up to about 45 degrees, for them to know how to and be proficient with things like self arrest in the event of a fall on snow, and using their crampons in different positions according the angle of the slope.

In our minds "glacier travel" means that climbers have been part of a rope team on glaciated terrain in the past and they know how to rope up and travel as a team member in a glaciated environment. Practice and experience with crevasse rescue would be part of this. We will take some

time to review these and other things on the glacier when the Denali trip starts, but climbers need to come into the expedition with some knowledge of how to build a snow anchor and set up a basic hauling system at a bare minimum. If you haven't done this in the past it should be pretty easy to get familiar with the systems either on your own or with some instruction from others.

Cold weather camping experience is definitely crucial and also usually fairly easy to attain. As you probably know Denali can very, very cold and wintery, especially on the upper mountain, and it is very important that everyone on the trip know how to take care of themselves in these sorts of conditions.

What we look for here is for folks to have spent multiple days in the backcountry, camping in winter conditions with temps close to zero or single digits.

I wish there was a way to ensure that no unqualified or under prepared climbers ever made it onto the mountain, and that we never had to turn down fit and motivated climbers that fall just short of the requirements.

Sadly this will probably not ever be the case. I hope that these thoughts and details demonstrate our dedication to the process of helping climbers choose appropriate objectives and setting them up for success rather than failure and hardship.

The first step in training for an expedition such as Denali is to understand the nature of the work ahead. Unless you know how difficult the climb will be and what the nature of those difficulties is, you won't be able to accurately and efficiently train for those activities.

Your training for Denali should focus on getting you into shape for the following activities:

Carrying Heavy Backpacks

"How heavy will my pack really be?" is one of the more common questions asked by Denali hopefuls. When most people hear the standard response of 70lbs they often discount that amount in thinking that their gear is lighter or their packing strategy better than those of the typical climber. Even if that is the case, your pack will still be heavy. The average weight of a fully loaded pack on Denali is between 60 and 70 pounds. During most days of the expedition we will not travel with full packs but at several points along the trip we will and so your training should be geared for this weight rather than the lesser weight on many of the expedition days.

The longest mileage day on Denali with big packs on is the trip from Base Camp to Camp 1 at 7800 feet. The trip is about 5.5 miles and gains about 1000 feet overall. More often than not groups opt for a "single carry" from Base Camp to Camp 1. This means that the team moves with all of their gear in-tow. Climbers should expect to have a

75lb pack and an 80lb sled on this day. This is one of the harder days of the expedition and it sets the tone well for the days to come.

On most of the remaining days of the expedition we will move with half loaded packs and sleds that are closer to 50lbs. The exception to this is the move from 14,000 feet to High Camp. We leave 14 Camp with half-loaded packs and pick up our cache at 16,200 feet along the way, finishing the ascent to 17,200 feet with fully loaded packs at high altitude. This day competes with summit day and day 1 for the hardest physical day of the trip.

Even on the decent, climbers have to deal with heavier packs as descending with heavy sleds is cumbersome and potentially dangerous. Weight ratios on the descent are more weighted towards the pack rather than the sled.

So as you can see, there are basically no days on this expedition where you will not be moving with at least a heavy pack, if not a very heavy pack. Prepare yourself physically and mentally for spending 21 days carrying a big backpack on rough terrain.

Pulling Sleds

Climbing Denali requires a literal mountain of gear. On the move from Base Camp to Camp 1 climbers are often moving over 150 pounds of gear and food each. Without the use of sleds this would not be possible. The sleds that we use attach to you in a number of ways, each with their own benefits and disadvantages. At Base Camp your guides will review sled rigging methods and help climbers get a system sorted out that will work with your pack and harness set-up. Some climbers prefer to bear the weight of their sled directly on their climbing harness while others choose to attach the sled to their pack. There is no right way and no wrong way to rid for pulling sleds and your chosen strategy will depend on your pack, body type, and a number of other factors. Chances are you will be making small adjustments to these systems for the majority of the trip.

Regardless of the rigging method chosen, pulling a fully loaded sled on a glacier is hard work and it's not work that most normal people are used to doing. The motion of leaning into a sled and using your legs for pulling momentum uses muscles in ways there are not accustomed to being used and it is hard on a lot of people. On many point of the route, gravity will be fighting your uphill efforts and the sled will want to slide down the hill behind you, requiring constant effort to maintain uphill momentum.

Camp Work

After the work of carrying backpacks and pulling sleds is over for the day, climbers should expect to either be building a new camp or digging a cache depending on which day of the trip we are on. See the sample itinerary below for more detail on this. Building a camp on Denali is hard work and it often takes several hours of labor to accomplish. At a new camp we have to dig in spots for up to 5 tents including one cook tent and usually a latrine at lower elevation camps. Digging, shoveling and cutting snow blocks is hard on your pack and very upper body intensive and when combined with the already difficult activities of the day and challenging environmental challenges, tends to wear even the most fit climber out after a while. Fortunately on this climb there are many hands to help with the labor and we are able to work in shifts more often than not.

Outside of the building and maintaining camp chores, climbers can expect to have to dig their tents out after snow storms, wash dishes and tidy camp after meals, and sort and organize food bags and group gear.

When the weather is good there is very little down-time on Denali. More on this in the sample day below.

Environmental Difficulties

Simply existing and staying warm and healthy in very cold temperatures and in rotten weather conditions takes a lot of energy and constant attention to one's state and physical condition. Although maybe not significant in and of itself, staying healthy and happy is harder than you think when combined with the difficulties detailed above.

High Altitude

"How Can I Train for High Altitude?" is probably among the top 5 questions asked by climbers heading to altitude. Unless you live at 10,000 feet in Colorado or one of the other moderate altitude regions in the US, there is nothing that you can do, outside of physical conditioning, that will benefit you with regard to acclimatization. Many people plan a trip to 10,000 feet or higher a month or two prior to their high altitude expedition and this is often a waste of time and money. Any benefit of this limited exposure to moderate altitude is lost in the few days after coming down.

Far more important is a climber's level of cardiovascular and aerobic fitness. Working hard at high altitude demands a lot more from your heart, lungs, and circulatory system and taking your physical training and fitness very seriously coming into this climb will be your best way of stacking the altitude odds in your favor.

Technical Difficulties

Although the West Buttress is not thought of as a technical route, there are some sections of the route that require physical conditioning outside of walking on moderate slopes with heavy loads. The fixed lines above 14 Camp involve about 800 feet of ascending which is usually on hard glacial ice. This section is protected by fixed lines which takes some of the risk away and makes the climbing less strenuous, but that doesn't mean this section is easy. The ground is steep (50+ degrees) and we typically have very heavy packs on this section because we leave sleds at 14k. Climbers will use on hand on an ascender that the slide along and use to pull up on, and then have a mountaineering axe in the other hand that they will use for balance and climbing. Using crampons on the steep ice is very strenuous on your leg muscle, particularly calves.

Descending

Descending from Denali is a long and unsavory process. Climbers are usually quite tired after spending the better part of 3 weeks climbing and the prospect of turning around and covering the 16 miles of downhill hiking back to Base Camp is a daunting process to consider. The downhill process is very hard on legs and particularly on knees. Even on the way down climbers have a lot of weight on their backs and are managing sleds that are constantly trying to run away and pull them down the hill.

From the moment you step off the plane and onto the glacier until you return to Talkeetna you will be working hard. Even on weather and rest days where we are not moving or carrying, there are things to do around camp and just existing in your tent during spells of bad weather depletes your energy and potentially motivation.

Notes on Training and Physical Conditioning

Please reference the included [physical conditioning guidelines](#) for [mountaineering and expeditions](#).

Comments from Recent Denali Climbers on Training for Denali

I failed the mountain because I was in a poor shape, before climbing I thought I was in excellent shape but on the mountain I faced reality. I have been mountaineering almost 20 years and this is the first time in which from day one you need to carry very heavy loads both on your back and in a sled. I underestimated this huge mountain and thus paid the price, AAI must emphasize and be crystal clear here, that this specific mountain involves walking with very heavy weight from the very first moment and there are not porters, or mules or anything else to carry loads like on other mountain expeditions.

There should be more emphasis on the physical conditioning required for the trip. None of the climbers recalled seeing anything related to the requirement to haul heavy sleds up some long and steep slopes. Better prior preparation would have made this aspect more enjoyable, or at least less onerous.

I felt that many on my trip were not as physically prepared as they could have been. We had a large number of people unprepared for the physical work of climbing the mountain. Climbers need to be informed about the difficulty of this trip and training programs for getting in shape.

I think it would be good to warn people that pulling a sled uphill puts a lot of stress on shoulders so they may want to do some conditioning hikes with a heavier than usual pack. I did a lot of workouts with a 70lb pack and I am glad I did!

Climbers need a better indication of the physical demands, i.e. Walking with 60-80lb. loads for 8 hours a day, sometimes in deep snow. Their training program needs to be much harder and longer than usual, six months minimum.

All climbers came in with varying degrees of training. It seemed to me that some climbers were ill prepared in regard to their physical fitness. I would suggest a more intensive or complete physical training routine for getting ready physically for expedition climbing.