

AMERICAN ALPINE INSTITUTE ^{LTD}

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PHYSICAL CONDITIONING Mountaineering Courses and Ascents

Alpine Mountaineering programs demand that the participant hike with a full pack for several hours per day for a number of days. Climbing is much more enjoyable for the participant with strong legs and good aerobic fitness.

The optimum conditioning program for each individual will depend on present physical condition, time, available equipment, and motivation. Start at an easy pace. Begin your training several months in advance for best results. If you haven't been involved in physical activities for a while, consult your physician. If you are unfamiliar with, or uncertain about the activities suggested, contact trained personnel at a fitness facility or gym.

Aerobic Conditioning:

Train by doing activities that closely mirror the movements you will be doing on the mountain. Aerobic fitness is gained by exercising at at least 65% of your Maximum Heart Rate (MHR). MHR can be estimated by subtracting one's age from 220 for males, and 226 for females. A 40 year old woman would have an estimated MHR of 186. If you are a fit person with a background in aerobic activity your MHR may be higher than estimated.

During your training program you should be working up to a session of 2 to 3 hours of aerobic activity at 65%-70% of MHR. One long session every 7-9 days with 2 or more 30-45 minute sessions in between will put you on the right track. Exercising at 75-85% of MHR for one of the short sessions per week will improve your fitness quickly. Also try to include some all day hikes or bike rides.

Using a heart rate monitor is a great help for beginners monitoring their training. A simple one is all that is needed. Polar makes a number of good models.

Suggested Aerobic Conditioning Activities:

4. **Hiking:** The best way to get in shape for hiking and climbing is to do exactly that. Throw on a pack and take a quick-paced hike. Include hills and add weight to the pack whenever possible.
5. **Stairmaster:** If there are no hills, this machine is the next best thing! Using treadmills at maximum incline is also effective. Switch between the two for variety. Stairmaster is a much more specific movement to climbing than running on the flats.
6. **Cycling:** Not as specific to climbing as hill hiking or stairmasters, but undeniably a great workout.
7. **Running:** Running or jogging hills is great training for climbing. Ideally, you will be able to find some unpaved roads or trails. Investing in the best possible pair of running shoes and avoiding running down steep hillsides and on pavement and other hard surfaces will help you minimize possible injuries. A program that includes moderate paced runs interspersed with sprints and uphill sections will put you in excellent condition.
8. **Swimming:** Swimming is a great aerobic activity when the knees need a break from the hills and trails. Swimming strengthens primarily the shoulders and back, so combining it with a program that works on

Strength Training:

Increasing strength, specifically leg strength, will help you get the most from your trip. Like aerobic training, strength training exercises should mirror the movements you will be doing on the mountain. Exercises should be performed in sets of 8-12 for those new to weight lifting. Two or three sets of each exercise is a good starting point. You should be using enough weight so that you are unable to do another lift somewhere between 8 and 12 lifts. Exercising to the point of failure is the stimulus that causes the muscles to grow stronger. Both machine lifts and freeweights are useful. Make sure to get proper instruction in order to avoid injury. Below are some recommended lifts with specificity to carrying a pack.

Strength Training Exercises:

4. **Leg Squats:** These can be done using a barbell and a squat rack, or a machine. There are a variety of machines that utilize similar movement patterns such as leg press machines. This is a great exercise for increasing leg strength for carrying the backpack.
5. **Standing Calf Raises:** These can be done with dumbbells in each hand. There are also a number of calf machines.
6. **Abdominal crunches and back extensions:** Good for stability while carrying a pack
7. Remember, 2-3 sets of 8-12 repetitions, 1-2 times per week.

Warming Up, Cooling Down and Stretching:

Begin your workouts with 5 to 10 minutes of easy warm up such as an easy jog or stationary biking. Stretching is best accomplished while muscles are warm, so this is an ideal time. Each stretch should be held for 20 seconds. End each workout with some easy activity and possibly more stretching. A wide variety of stretches that include all major muscle groups is recommended. Focus on the legs. There are many good books illustrating stretching.

Remember, it's important to set a realistic goal for yourself. Take a break if you are feeling low or exhausted. Avoid overtraining as it may result in injury and a setback to your program. A program involving the entire body and integrating a number of activities will be both fun and exciting, and you'll find yourself motivated to spend time on your training. The better condition you come in, the more you'll enjoy your climbing. Good luck on your training program!

Sample Training Schedule:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1.5-2 hours aerobic activity	rest	Strength training	30 minute aerobic activity	Strength training	30 minute aerobic activity	rest

Recommended Resources:

Climbing: Training for Peak Performance. Clyde Soles (2002). Mountaineers Books. Provides a good overview of training.

American College of Sports Medicine. www.acsm.org Good general information on