School for International Expedition Training 

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# Training Program for SIET

**Why** do we recommend training? In the mountains, your body is your tool. On our courses, we find that the more fit our students, the greater their success and enjoyment; they are able to take advantage of learning and leadership opportunities and focus on curriculum and peak ascents. In the mountains, fitness and endurance are also part of our risk management strategy, enabling us to move quickly through areas with overhead hazard or conduct a rescue after an ten-hour summit bid. Additionally, overall fitness decreases injuries, enabling students to physically participate in the entire course; this is key, as our curriculum is primarily experiential.

***On our courses, you will need to:***

* Easily hike up to eight miles with 4,000’ elevation gain carrying a 20 lb. day pack
* Easily hike up to two miles with 2,500’ elevation gain carrying a 55-65 lb. pack
  + The following day: ascend and descend 4,000’ in mixed snow and ice with a 20lb summit pack, pack up camp, and descend an additional 2,500’ to base camp with a 55-65lb pack
* Sustain multiple days in a row of hiking, climbing ice/rock (60-80°/5.0-5.8), and glacier travel
  + At elevations of 10,000’ to 20,000’
  + In adverse and unpredictable weather conditions
    - Highs in the 70’s°F
    - Lows in the -20’s°F plus wind chill
    - High winds
    - White-out conditions
    - Rain, snow, and sleet
* Have the physical and mental energy to accomplish the above and a sufficient reserve to then set up camp, cook dinner, and prep for the next days’ objective

If you are in peak shape on an expedition, you will be able to participate fully and be positive, patient, and able to take initiative after a long, physically challenging day. Training will teach you how much you can push yourself, how long it takes you to physically recover, and how you respond to stress.

When we consider how to prepare for an expedition, we can break it down into three main categories: 1) Pure mileage and elevation gain; can your body go the distance. 2) Pure time on your feet; no matter how fast you’re going, can you physically be on your feet, moving/climbing for 10-12+ hours straight? 3) Proper fueling; Figure out your fueling plan well ahead of your trip, know what types of food and hydration mixes work for you, test out different snacks and keep in mind that often what tastes good at low elevations may repulse you at high elevations.

In order to train (before an expedition) and participate (on an expedition) in a sustainable fashion, it is imperative that you listen to your body and take care of it, both physically and mentally. Address injuries early before they turn into problems. Plan recovery and rest periods. Ramp up training volume and loads gradually, without over-doing it and causing injury and/or overtraining syndrome. Start tapering your training 1-2 weeks before your departure date; this is not something you can “cram” for.

# Training Categories

## To move efficiently in the mountains, we need a combination of aerobic (cardiovascular) endurance, strength and balance, and the ability to sustain short periods of high intensity output. Our training program reflects this. Each week we will include training in four different categories: Aerobic Endurance, Power Endurance, Strength/Balance, and Recovery/Mobility.

## **Aerobic Endurance**

**Why:** You will learn more if you’re not physically struggling every time we travel and/or attempt a peak ascent. Having a large aerobic base will allow you to move more efficiently and maintain energy reserves throughout the expedition.

**What:** Aerobic exercise (HR zone 1-2, you should be able to maintain a conversation)

* Running
* Hiking
* Nordic/cross country/skate skiing
* Ski touring
* Swimming
* Rowing
* Cycling (mountain or road)
* Easy climbing (climbing two grades below what you project)

**Suggestions:**

* Train in the terrain in which you aim to perform, as much as possible:
  + Steep hills (up, down, and side-hilling)
  + Single track trails
  + On snow and uneven trails
  + Scrambling in boulder fields
  + Easy rock climbing
* Eventually, do some longer hikes in the boots you plan to wear.
* Wear a pack with incrementally increasing weight.

**Total Time:** This training category should comprise the majority of your overall training volume, 3-4 days per week of 30-90+minute sessions.

## **Power Endurance**

**Why:** On big alpine routes, we will encounter abrupt terrain changes and short periods of more difficult movement which we need to move through with maximum efficiency. It is especially critical to minimize our time in areas with overhead hazard (rock fall, seracs, etc.).

**What:** High-output exercise lasting between 5 – 30 minutes (HR zone 3-4, it should be hard to talk)

* Increase the intensity of aerobic exercise for short intervals (see examples below)

OR

* Cross fit-style high intensity workout with rotating exercises
  + Split jumps, burpees, squats, lunges, push-ups, pull-ups, sprint on rowing or bicycle machine, box steps or jumps, etc.
* Some examples of high-intensity training:
  + Uphill hike (or run) “sprints”
    - Walk or run up hill, walk down, walk or run back up, walk down, etc.
  + Stair or box-step “sprints”
    - Walk or run up stairs
    - High intensity box steps
  + Interval training (30-60seconds of high output followed by 30-60seconds of rest)
  + Tabata workouts (<https://www.tabataprotocol.com/>)

**Suggestions:**

* Start with 15-min sessions and gradually increase intensity, sets, and repetitions
* Warm up correctly with 10-15minute easy cardio and some light stretching
* Avoid injury by seeking out a trainer to make sure you are performing exercises properly
* If you are new to specific exercises, pay special attention to how your body responds
* Ease into this and don’t overdo it by doing too much, too quickly.

**Total Time:** This should comprise a small amount (10-20%) of your total training volume, 1-2x/week.

## **Strength/Balance**

**Why:** Avoid injury by strengthening your core and posterior chain muscles, and antagonist muscle groups. Work on balance to improve performance through uneven mountainous terrain.

**What:** weightlifting or body-weight training, focusing on glutes, core, and posterior chain strength, in addition to pushing and pulling in multiple planes.

* Weightlifting
  + Free Weights (DBs/KBs) or Barbell training – proper technique is essential
  + “Carries”: Kettle bell or weight carries teach you how to carry loads with proper form
  + Full kinetic chain movements (i.e. squats/deadlifts/push press) are more effective than isolated muscle movements (i.e. biceps curls)
* Resistance work with therabands (can be especially beneficial for shoulder health)
* Yoga (strength or power based classes)
* Pilates
* Core strengthening exercises:
  + Forearm planks, push-up position planks, side planks
  + Side dips
  + Crunches
  + Bird dog (quadruped and push-up position)
  + Windshield wipers
  + Back extension (cobra, prone swimming, up-dog)
  + Push-ups and pull-ups
* Single leg balance and strength work

**Suggestions:**

* Strengthening the core and antagonist muscles is a critical piece of the training “puzzle.”
  + Consider hiring a professional trainer for one or two sessions, or once a month
  + If you’re primarily working out on your own, take a yoga, pilates, or weight-lifting class once a month and ask the instructor to give you feedback on your form.

**Total Time:** This should comprise a small amount (10-20%) of your total training volume, 1-2x/week.

## **Recovery/Mobility**

**Why:** Maintain a functional range of motion and avoid injury by stretching and releasing tight muscles. Listen to your body and prioritize proper recovery to decrease the risk of overtraining.

**What:** Stretching and release work on your own, yoga, massage, acupuncture, bodywork.

* Restorative or Stretch Yoga classes
* Stretching
  + Stretch major muscle groups
    - Quads, IT bands, hamstrings, calves
    - Hip flexors, extensors, and rotators
    - Low back, lats/side torso
    - Upper traps, pecs, triceps
    - After climbing: forearms and hands/fingers
* Release work
  + Massage therapy (1x/mo), chiropractic work, acupuncture
  + With a foam roller:
    - Release quads, IT bands, calves, back, lats
  + With a pinky (similar to a lacrosse) ball, “MELT” balls or tennis ball (less optimal):
    - Release feet, back extensors, pecs, upper traps, and glutes

**Suggestions:**

* Make stretching and release work –even just five minutes—a habit after every workout.
* Schedule massage/acupuncture/bodywork occasionally to help release tight muscles and overall training stress.
* Consider purchasing a trigger point release massage ball, theragun, and/or foam roller to use at home.

**Total Time:** This should be integrated into your daily routine, can include 1-2x/week longer sessions.

# Training Schedule

## A typical training program for a mountain expedition will last anywhere from 3-6 months, depending on your objective and your base level of fitness. Here, we have given some guidelines for a 16-week schedule, with recommendations for training duration and frequency, how to properly increase volume and load, and how to organize each week.

**Training Template:** An average week may look something like this:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| Rest/ Recovery | Strength/ Balance | Aerobic Endurance | Power Endurance | Aerobic Endurance + Strength/ Balance | Rest/ Recovery | Aerobic Endurance – longer day |
| *30-60min easy stretching, restorative yoga, massage* | *30-60min weight-lifting*, *core, pilates or yoga* | *30-60min aerobic exercise, optional pack weight* | *10min easy cardio + 15-30min interval training* | *30-60min of easy climbing + 30min strength training* | *30-60min easy stretching, restorative yoga, foam roller* | *90+ min hike with pack and elevation gain* |

## **Training Progression:** It is imperative to increase training volume and load gradually. A suggested schedule would be:

* **Weeks 1-4:** Longer day of 1.5-2hr, with 5-15lb pack, elevation gain up to 1,500ft.
* **Weeks 5-8:** Longer day of 2-3hr, with 15-25lb pack, elevation gain up to 2,500ft.
* **Weeks 9-12:** Longer day of 3-4hr, with 25-35lb pack, elevation gain up to 3,500ft.
* **Weeks 12-16:** Longer day of 4-5hr, with 35-45lb pack, elevation gain up to 4,500ft.

**Suggestions**:

* Test out gear and boots during some of your longer hiking days.
* Take time to figure out your fueling plan, experiment with different types of snacks and hydration mixes. Variety is key!
* Spend time above 10-12,000ft if possible. Especially in the last 4-6 weeks of the program.
* Do a couple of bigger back-to-back days leading up to your trip. Get your body used to doing two days in a row of 3-5 hours hiking. This could be an overnight backpacking trip, or two back-to-back day hikes.
* Prioritize recovery! Make sure you’re eating and sleeping enough to maintain your training progression. Address injuries or muscle tweaks/strains early before they develop into problems.
* Schedule at least one full day of rest/recovery into every week.
* Start tapering your training (reducing volume and load) 1-2 weeks before your trip to make sure you are energized and ready to go on the expedition!
* Have fun! Explore new trails, recruit work-out and hiking buddies, check out classes at a local gym, and be creative with your workouts. Training is hard work; find ways to keep it interesting so you are motivated to keep at it.