

# **Backpacking Manual**

# Backpacking

## TRIP LEADER REQUIREMENTS

- **Assistant Trip Leader** – 1 backpacking trip in the last 2 years; Hiked 11,000 ft peak in the last 2 years; Knows signs and symptoms of altitude sickness; Demonstrated use of stove, water filter, cooking meals, setting up tents; First Aid/CPR certified
  - Provides instruction for safety on backpacking including gear, cooking, filtering water, setting up camp, hydration, hyponatremia, altitude sickness
  - Monitors participants for signs and symptoms of signs and symptoms of hypo/hyperthermia, dehydration, and Acute Mountain Sickness (if above 8000 ft)
  - Assists in fitting and checking gear and participants for safety
  - Carries first aid kit and administers basic first aid if needed - can be designated Medic Guide
  - Carries 2-way radio for communication
  - Wears Trip Leader handkerchief to identify as a Trip Leader
  - Wears whistle to communicate in emergencies
- **Lead Trip Leader** – Serving as main Trip Leader of the group; 3 backpacking trips in the last 5 yrs - one multiday; Hiked 11,000 ft peak in the last year; Can teach and recognize signs of Altitude Sickness and Evacuation Techniques; 20 hours experience leading activity; Wilderness First Responder Certified
  - Recons area for activity within 1-2 months of activity
  - Completes Trip Report prior to and after activity
  - Determines routes including emergency routes
  - Aware of signs and symptoms of hypo/hyperthermia, dehydration, and Acute Mountain Sickness (if above 8000 ft) and teaches participants as needed
  - Checks weather
  - Checks gear for safety prior to activity
  - Checks participants for safety and leads safety discussion
  - Carries first aid kit if not designated to Assistant Trip Leader
  - Carries 2-way radio for communication and Bear Spray (if needed)
  - Wears Trip Leader handkerchief to identify as a Trip Leader
  - Wears whistle to communicate in emergencies
  - Communicates with Base Commander at the beginning, middle and end of activity via phone or In Reach Beacon

- o Completes Incident Report and/or SOAP Note if any concerning situation occurs on activity
- o Reports any damaged gear or safety concerns from trip

# Backpacking - Activity Plan

## PRIOR TO ACTIVITY

### GEAR

- **Provided by Mt Mamas:**
  - First Aid Kit per activity
  - Whistle per Trip Leader
  - 2-way radios
  - Emergency Beacon (if needed)
  - Bear Spray (if in area with recent bear activity)
- **Provided by Participants:**
  - Running shoes/boots
  - 2-3 pair wool or synthetic socks
  - Hiking pants/shorts (not cotton)
  - Short sleeve shirts (no cotton unless in the desert)
  - Long sleeve shirts (not cotton)
  - Fleece and/or down insulating layer
  - Waterproof jacket
  - Thin synthetic gloves
  - 2-4 L water in water bottles or water pouch
  - 1 snack per hour on activity
  - Meals
  - Hat for sun
  - Beanie
  - Sunglasses
  - Sunscreen
  - Bug Spray
  - Camera
  - Personal first aid kit
  - Knife
  - Emergency supplies - compass, flashlight, lighter, emergency blanket, cordage, multitool (10 essentials)
  - Hiking poles (optional)
  - Backpack with rain cover
  - Sleeping bag (rated to 20 degrees)
  - Trash bag for sleeping bag (if chance of rain)
  - Sleeping pad

- Tent (can share)
- Cooking stove and fuel (can share)
- Camping mess kit
- Way to hang food overnight
- Water filter (can share filter)
- Bear bell
- Spare trash bag for wet clothing & gear
- Headlamp
- **Have participants watch:**
  - [What to bring backpacking](#)

## POSSIBLE ACTIVITY LOCATIONS

- Willow Heights, Big Cottonwood Cyn (Intro Clinic)
- Primrose Basin, AF Cyn (Intro Clinic)
- Ruth Lake, Uintahs (Intro Clinic)
- Silver Lake, AF Cyn (Intermediate)
- Needles District, Canyonlands (Extreme)
- Coyote Gulch, Escalante (Extreme)
- Mt Timpanogos, Provo (Extreme)
- Kings Peak, Uintahs (Extreme)

## INDIVIDUAL DEFINITIONS

- **Participant** – Individual participating in activity
  - Notify Mt Mamas of any health concerns or injuries prior to activity
  - Report if activity appears too strenuous or difficult
- **Assistant Trip Leader** – Assists Lead Trip Leader with activity
- **Lead Trip Leader** – Leads activity with Assistant Trip Leader (if needed due to group size)
- **Sweeper Trip Leader** - Last Trip Leader in the group (usually the Assistant Trip Leader)
  - Makes sure all participants make it through activity safely
  - Carries 2-way radio for communication with Lead Trip Leader
- **Medic Trip Leader** – Trip Leader designated per activity with first aid/CPR certification
  - Main Trip Leader in charge of minor accidents or injuries
  - Designated Trip Leader to stay with injured individual if case of evacuation
  - Last in group and will assist any in the back of the group with any concerns
  - Carries 2-way radio for communication

- **Base Commander** – Individual not participating in activity that Trip Leader Guide is to report to prior to before, during and after activity of safe completion of activity.
  - Will notify emergency contacts and/or Search and Rescue if group is late or lost

## **BEGINNING ACTIVITY**

### **SAFE GEAR (GEAR CHECK)**

- Check Mt Mama gear for safety: first aid kit, 2-way radios, emergency beacon (if needed), bear spray (if needed)
- Check Participants gear for safety - backpacks, shoes, trekking poles
  - Gear
    - Backpack Fitting - no tears, buckles/zippers working, fit appropriately (See - Appendix A)
    - Stoves – check they are compatible with fuel
    - Water purifiers – check for intact filter without cracks and clean
    - Tents – check that all parts are present, zippers working, no tears
    - Sleeping bags – rated to temp of trip
    - Trekking poles - fit for a 70 degree bend in arm
  - Trip Leaders are NOT required or responsible to size or fix broken gear - participants should ensure gear is safe and sized correctly prior to activity
  - Trip Leaders can refuse participation of any Participant if gear is determined to be unsafe.
- Trip Leaders can demonstrate how to adjust gear
  - Backpacks - adjust hip belt first, then shoulder straps, making sure water and snacks are easily accessible
  - Trekking poles - have arm bent at around a 70 degree angle

### **SAFE PARTICIPANTS**

- Trip Leader to Participant Ratio 1:8
- Check Participants for safety: appropriate clothing, appropriate health, appropriate gear
- NOTE: sizing should be determined by individual or rental shop - Trip Leaders are NOT required or responsible to size or fix gear

### **SAFETY TALK**

- **Circle Up** - when Participants arrive, gather them together in a circle and have

them share 3 things:

- Name
- Experience in the activity
- Goal for the activity
- **Safety talk:** describe the activity and safety items for Participants to be aware of (5 items):
  - Environment – weather, mountain conditions, trail conditions, location, distance, routes, time expected, Bathrooms/Cell phone service
  - Gear – what gear we will be using and how to use it - backpack sizing
  - People – sunscreen/hat/sunglasses, food/water, appropriate clothing
    - Clothing - layers (thin synthetic base layer, insulating down or fleece layer, water proof shell - see Appendix B)
    - Safety - [10 Essentials](#)
      - Food - bars, snacks
      - Water - water filter/ 3 L hydration pouch
      - Shelter - emergency blanket/cordage
      - Fire - lighter
      - Fix It - duct tape on pill bottle, leatherman
      - First Aid - bandages, superglue, etc
      - Insulation - summer - buff, liner gloves, synthetic vest, windbreaker
      - Navigation - compass
      - Illumination - headlamp
      - Sun Protection - sunscreen, sunglasses, sunhat
  - Dangers – describe any dangers that could occur:
    - Mountain Safety - Rapid weather changes, hazards along the route (rock slides, river crossings, snow field crossings, cliffs, wrong turns etc), poisonous plants, wildlife
    - Dehydration
    - Acute Mountain Sickness if over 8,000 ft (see Appendix C)
    - Hypothermia (see Appendix D)
    - Heat Exhaustion/Stroke (see Appendix E)
  - Safety – what you will be doing to mitigate those dangers

**BACKPACKING LESSON (PROGRESSION)** - Trip Leaders can use their own discretion to determine which drills and skills would best meet the goals of the Participants. A progression is a series of steps that logically build on one another, increase in difficulty, and are focused specifically on the participants. There are always several ways to teach a lesson. Every Participant needs different things, some will need to spend time on a skill and others can skip ones.

- Teaching Tips
  - Trip Leader Body Language
    - Posture - relaxed, stand and face them
    - Hand Gestures - waving, thumbs up, hand shakes or high fives
    - Facial Expressions and Eye Contact - make eye contact, smile
  - Teaching Theory
    - Understand the Teaching/Learning Cycle (see Appendix F)
    - Understand Different Learning Styles (see Appendix G)
- Choose which skills would be appropriate for your group in the selections below

## **ON THE TRAIL (choose which skills would be appropriate for your group)**

- **Stretching** - prevent injury, improve performance, and prevent soreness  
(Chase Mountains [“Do this before your hike” video](#))
  - Neck rotations - 5 each way
  - Shoulder rotations - 10 over and back with trekking pole
  - Tornado twist - 10 each side
  - Toe taps - 10 each side
  - Squats - 10 reps
  - Lunges - 5 reps each side
  - Air deadlift - 5 reps
  - Leg swings - 10 per side
  - Quad stretch - 30 seconds each side
 For more long-term strength building:REI [“Training for Backpacking”](#)
- **Muscle Efficiency**
  - Rest Step - using skeleton to hold body each step - step, straighten leg, rest, step
  - Poles help decrease strain on legs going up and especially going down
  - Don't rest more than 5 min or lactic acid will build up and it will hurt more to start again
  - Stop hourly or sooner if needed for: hydration, snacks, clothing adjustments, blister check
- **Hydrate and eat often** (2-4 L; more salty foods than sweet)
- **Weather**
  - Sites/Apps - [National Weather Service](#), [Mountain Weather](#), [Avalanche.org](#)
  - Temperature - be aware of ranges and make sure participants have appropriate clothing
  - Precipitation - be aware of predictions; have safe locations for bad weather if you have to wait it out

- Thunder/lightning - get off ridges/summits/water immediately; wait it out for at least 30 min if possible
  - Wind - high in large plains, ridges, summits
  - **Orienteering**
    - Topo apps that will track you: Gaia (best off grid - download prior); All Trails (best near the city) - both free
    - [Using a compass](#)
    - [How to read a topo map](#)  
(references: REI videos)
  - **Classes of Terrain** - avg hiker hikes 2 mph on avg terrain
    - Class I - flat trails, easy route finding
    - Class II - light scrambling - talus/boulder fields, low angle
    - Class III - moderate scrambling - boulder fields, moderate angle, requires handholds for stability, may need belay on short sections
    - Class IV - difficult and exposed scrambling, steep angle, rope advisable for high fall risk, exposure  
(referenced from Sierra Club: [Definitions for Scrambling Ratings](#))
  - **Hiking Ratings** (see Appendix H)
  - **Natural History**
    - Plants
      - 3 types of conifers
        - Pine - needles in groups on the stem
        - Fir - single needle on branch, “flat and friendly” needles
        - Spruce - single needle on branch, “square and sharp” needles
      - Deciduous
        - Aspen - white bark, heart-shaped leaves
        - Cottonwoods - grow near water, heart-shaped leaves
        - Oak - lobed leaves
        - Maple - 5-pointed leaves
- (referenced from: [“Knowing Trees”](#))
- **Wildlife Tracks** - can see in mud or recent snow (see Appendix )
    - Dog - 4 toes, narrow, toe nails (fox, coyote, wolf)
    - Cat - 4 toes, wide, no toe nails (bob cat, cougar)
    - Deer Family - 2 tear-drop prints pointing in direction of travel (deer, elk, moose)
    - Rodent Family - 2 large rear prints, 2 small front prints - big prints first in the direction of travel (mice, squirrel, rabbits)  
(referenced from: [“Nature Mentoring”](#))
  - **Bird Calls** - “Merlin” is a great free bird call app

## IN CAMP TEACHING

- **Choosing Location**
  - 200 ft from trail, water and cooking location
  - Low impact to environment - on previous campsite or rock
  - Camping Triangle Rule - Separate areas by 200 ft (70 big steps)
    - Sleeping area
    - Cooking area
    - Food storage
- **Minimize wildlife contact**
  - Keep food away from tent: Keep food smells and supplies away from your tent to reduce the chance of attracting wildlife
  - Cook downwind: Position your cooking area downwind from your tent.
  - Clean up: Wash dishes and cooking utensils right after use and store them downwind of your tent.
  - Store food properly: Use bear canisters or hang food in trees (4 ft from tree, 10-15 ft from ground)
  - Change clothes: After cooking, change your clothes and wash up.
  - Be cautious at night: If moving around at night, be extra cautious and use a flashlight.
- **Stoves**
  - Set up and demo use with fuel and how to light
  - Have Participants practice
- **Cooking** – display different items to cook and assist cooking as needed
  - Breakfast – oatmeal, granola, dried fruit, dehydrated milk
  - Lunch – (not cooked) tuna and pita, granola, crackers, jerky, etc
  - Dinners – pasta, dried soups, etc
- **Water Purification** – demo then practice
  - Filter 1 Liter of water with different purifiers (straw, pump, UV, Sawyer)
- **Camp Cleanup**
  - Break down camp and ensure all items are packed away
  - Leave No Trace
    - Pick up garbage and food
    - Return rocks and plants to original locations if moved
    - Ensure fire is put out (if fire ring was used)

## WRAP UP AND CLOSING

- **Review**
  - Review Lesson - how the days went, clarify any questions
    - Have participants review their trip
    - Focus on positives

- Review Skills - ask questions on new skills acquired
- Review Goals and Progress - successes and struggles
- Make a plan for practice at home - discuss skills to work on or upcoming trainings
- **Preview** - what they could learn next
  - Build on new learning
  - Invite them back - look up upcoming trips online

(based on the Professional Ski Instructors Association/American Association of Snowboard Instructors (PSIA/AASI) certification courses "Delivering the Beginner Experience -Alpine" and "Alpine - Level 1")

# Risk Management Plan

Backpacking has large inherent risks. Without good Risk Management it is impossible to create the “safe and joy-filled environment” that Mt Mamas seeks to offer every Participant. Managing risk involves using good judgment to make sound decisions in a dynamic environment. This section contains a general overview of common risk factors on backpacking trips as well as an outline of expected practices for activities. Additionally, you will find the Emergency Action Plan detailed step by step on what to do if you are faced with some common injuries while during the activity and also for emergency situations.

Objective Risk Factors exist inherently in the activity itself

Subjective Risk Factors exist as a result of human engagement in the activity

## RISK MANAGEMENT PRACTICES

- **Ratios:** Trip Leaders should maintain a **1:8 Lead Trip Leader to Participant ratio** for each backpacking group and groups can be increased with additional Assistant Trip Leaders to maintain the Trip Leader to Participant ratio.
- **Training:** Mt Mamas requires all Lead and Assistant Trip Leaders to be able to demonstrate proper technique and skills listed at the beginning of this manual.
- **Gear Safety:** Trekking poles, backpacks, stoves, water filters, etc will be brought by participants and Trip Leaders will assess generally for safety.
- **Gear Inspection:** Trip Leaders will assess gear for safety prior to trip. Trip Leaders are NOT required or responsible to size or fix broken gear - Participants should ensure gear is safe and sized correctly prior to activity. Trip Leaders can refuse participation of any Participant if gear is determined to be unsafe.
- **Planning & Preparation:** Good risk management begins with good planning and preparation. Trip Leaders will select an appropriate activity site and route that takes into account (among other things) expected weather, terrain, timing, other users, group size, background, experience, physical condition, and goals for the day. Trip reports, waivers, and checklists will all be utilized online prior to the activity to ensure the group is prepared before each trip.
- **Participant Fitness Level:** Must be able to participate in athletic activity without difficulty. Individuals are responsible to notify Trip Leader PRIOR to the trip if they are not feeling their fitness level is adequate.

# Emergency Action Plan

## Backpacking

### PREVENTION

- Trip Leader
  - Trained in First Aid/CPR (Assistant Trip Leaders) and Wilderness First Responder/CPR (Lead Trip Leaders)
  - Completes Trip Report prior to activity (office will update medical and emergency contact information on Participants)
  - Carry First Aid Kit at all times during activity
  - Carry bear spray (if in high risk bear country)
  - Use walkie talkies (one for each Trip Leader)
  - Carry In Reach Beacon (if needed)
  - Check for safe gear, safe participants and have safety chat prior to activity
  - Notify Base Commander of group status and the beginning, middle, and end of activity by phone or beacon
- Base Commander
  - Receive notifications from Trip Leader at the beginning, middle and end of activity
  - Be available during activity to notify emergency contacts of tardiness of group or assist in emergency evacuation or contacting emergency services if needed
- Office
  - Update Trip Report with medical and emergency contact information on participants
  - Email Trip Leader and Base Commander the Trip Report and Emergency Contact and Medical Information prior to activity

### LOST OR LATE RETURNING GROUPS

- Prior to activity
  - The Trip Leader will fill out a preliminary **Trip Report** complete with proposed location of activity, possible evacuation routes, and expected times for leaving and returning.
  - Every trip will have a **designated "Late Time"** the the Base Commander will notify emergency contacts of delay.

- o Every trip will have a **designated “Emergency Time”** when the Base Commander will notify Search and Rescue if the Base Commander has not been notified of the safe exit of all participants from activity.
- The Trip Leader can **notify the Base Commander during an activity if the predicted times need to be adjusted.**

## INJURIES

- **Minor Injuries:** (minor scrape, sprain, etc.)
  - o The designated Medic Trip Leader (generally the rear Assistant Guide or Trip Leader with most medical experience) will administer first aid while the other Trip Leader manages the rest of the group. The affected participant should be kept calm and comfortable. A Trip Leader, or volunteer with medical experience, should remain with the injured participant until they are able to return to the rest of the group. An **Incident Report** should be completed on site if possible or after and signed by both patient and Trip Leader. Take clear **photos** of any wounds or injuries when it is convenient.
- **Major Injuries:**
  - o The designated Medic Trip Leader will stay with the participant and assist while the Lead or Assistant Trip Leader manages the rest of the group. The Lead Trip Leader or designated Assistant Trip Leader will make phone calls to the appropriate emergency number below. **An Incident and SOAP Note** should be completed at the time of the event if possible. Take clear **photos** of any wounds or injuries when it is convenient.

## COMMUNICATION

- In a Life/Limb Emergency or Property-threatening emergency
  - o Try the National Park/State Park/Forest Service/BLM-specific emergency numbers
  - o If no park-specific numbers exist, call 911
  - o If 911 does not work, use emergency beacon to notify Search and Rescue
- In ALL Emergency Situations, after care has been secured, **notify Base Commander**. If Base Commander is not available, call Emergency Backup Personell (Emily Hacken 801-860-4591) or Marilyn Boucher (801-803-1398). Call each number three times in succession, if no one answers the three phone calls, wait 15 minutes, and move on to the next person.

## EVACUATIONS

- If a participant is injured and requires evacuation, follow these procedures based on the situation:

- o The participant can walk - Trip Leaders will assist the participant in walking/skiing/hiking out.
  - o The participant can't walk – Trip leaders will assess if the participants will need to be carried out (if this can be done safely).
  - o The participant can't be carried – if due to a possible head/neck injury or other injury, then notify 911 and/or search and rescue.
- Trip Leaders will assess all locations in an activity to determine easy access to vehicles and alternate escape routes prior to activity. Trip Leaders will document this in the Trip Report and discuss this with Participants at the beginning of activity.

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# APPENDICES

## APPENDIX A

### Backpacks (if rented) -

- **Step 1: Hipbelt** Put the pack on. Move the hipbelt until the padding hugs the top of your hip bones (your iliac crest). If it sits too low or too high, tighten or loosen the shoulder straps to raise or lower the hipbelt. Fasten the hipbelt buckle and tighten it. Be careful not to overtighten the belt: It should be snug and secure without uncomfortably pinching your hips. Check the padded sections of the hipbelt to make sure they sit on the top of your hips; if not, readjust your shoulder straps and hipbelt. Try different tensions until you find the sweet spot. Belt padding should extend slightly beyond the front point of your hipbones. You also need at least one inch of clearance on either side of the center buckle: If you have less, call REI to see if a smaller belt is available.
- **Step 2: Shoulder Straps** - Pull down and back on the ends of the shoulder straps to tighten them. Shoulder straps should wrap closely around your shoulders, but they should NOT be carrying significant weight. If they are, you'll be putting undue stress on shoulder, neck and upper-back muscles. Check to see that the shoulder strap anchor points on your pack are 1 to 2 inches below the top of your shoulders, roughly at the top of your shoulder blades. If not, then either your hipbelt is at the wrong level or your pack's torso length is incorrect. Vary shoulder-strap tension by tightening and loosening the straps. Learn how to adjust the straps in small increments so you can relieve any pressure points or pain during your hike.

- **Step 3: Load Lifters** - Load-lifter straps connect the top of the shoulder harness to an anchor point near the top of the back panel. When tensioned, they should angle back toward the pack body at roughly a 45-degree angle. Don't overtighten the load lifters! Excess tension that feels great initially can pinch shoulder joints and create discomfort. Strive for snug—not stiff—tension. If you



notice a space at the top of your shoulder harness, loosen the load lifters and try again.

- **Step 4: Sternum Strap** - Slide the sternum strap until it's at a comfortable height across your chest: roughly an inch below your collarbones. Buckle and tighten the sternum strap to set the shoulder straps at a width that allows your arms to move freely. Avoid the common mistake of overtightening the sternum strap. This can distort the overall fit of your harness, constrict your chest muscles and restrict your breathing.

## APPENDIX B

### Clothing

- Summer - cotton can pull heat away from the body if wet, but can still be dangerous if you get cold, thin, light-colored clothing, hats/sunglasses for protection against sun
- Winter - Layers is key, "cotton is rotten"
  - Base layer - (wicks away sweat) synthetic, thin long sleeve layer
  - Insulating layer - (insulating) fleece, down, wool
  - Shell layer - (weather protection) waterproof jacket - with pit zips for ventilation
  - Hat, gloves

## APPENDIX C

**Acute Mountain Sickness** – Acute mountain sickness is an illness that can affect mountain climbers, hikers, skiers, or travelers at high altitudes, usually **above 8000 feet** (2400 meters)

- **Causes:** Acute mountain sickness is caused by reduced air pressure and lower oxygen levels at high altitudes. The faster you climb to a high altitude, the more likely you will get acute mountain sickness.
- **The best way to prevent altitude illness is to ascend gradually.** It is a good idea to spend a few days ascending to 9850 feet (3000). Above this point ascend very slowly so that the elevation at which you sleep does not increase more than 990 feet to 1640 feet (300m to 500m) per night.
- **You are at higher risk for acute mountain sickness if:** You live at or near sea level and travel to a high altitude. You have had the illness before. You

ascend quickly. You have not acclimatized to the altitude. Alcohol or other substances have interfered with acclimatization. You have medical problems involving the heart, nervous system, or lungs.

- o **Mild Symptoms:** Difficulty sleeping, Dizziness or light-headedness, Fatigue, Headache, Loss of appetite, Nausea or vomiting, Rapid pulse (heart rate), Shortness of breath with exertion,
- o **Severe Symptoms:** Blue color to the skin (cyanosis), Chest tightness or congestion, Confusion, Cough, Coughing up blood, Decreased consciousness or withdrawal from social interaction, Gray or pale complexion, Inability to walk in a straight line, or walk at all, Shortness of breath at rest
- o **Treatment:** for all forms of mountain sickness is to climb down (descend) to a lower altitude as rapidly and safely as possible. You should not continue climbing if you develop symptoms. People with severe mountain sickness may need to be admitted to a hospital. A medicine called acetazolamide (Diamox) may be given to help you breathe better. It can help reduce symptoms.
- o **Outlook (Prognosis):** Most cases are mild. Symptoms improve quickly when you climb down the mountain to a lower altitude. **Severe cases may result in death due to lung problems (pulmonary edema) or brain swelling (cerebral edema).** In remote locations, emergency evacuation may not be possible, or treatment may be delayed. This can have a negative effect on the outcome. The outlook **depends on the rate of descent once symptoms begin.** Some people are more prone to developing altitude-related sickness and may not respond as well.
- o **When to Contact a Medical Professional:** Call your provider if you have or had symptoms of acute mountain sickness, even if you felt better when you returned to a lower altitude. Call 911 or your local emergency number if you or another hiker have any of the following symptoms:
  - Altered Level of Consciousness
  - Coughing up Blood
  - Severe Breathing Problems
- o **Prevention -** Keys to preventing acute mountain sickness include:
  - Climb the mountain gradually. Gradual ascent is the most important factor in preventing acute mountain sickness.
  - Stop for a day or two of rest for every 2000 feet (600 meters) of climb above 8000 feet (2400 meters).
  - Sleep at a lower altitude when possible
  - Make sure that you have the ability to rapidly descend if needed.
  - Learn how to recognize early symptoms of mountain sickness

- If you are traveling above 9840 feet (3000 meters), you should carry enough oxygen for several days. If you plan on climbing quickly, or climbing to a high altitude, ask your provider about medicines that may help.
- If you are at risk for a low red blood cell count (anemia), ask your provider if your planned trip is safe. Also ask if an iron supplement is right for you. Anemia lowers the amount of oxygen in your blood. This makes you more likely to have mountain sickness.
  - Do not drink alcohol
  - Drink plenty of fluids
  - Eat regular meals that are high in carbohydrates
  - You should avoid high altitudes if you have heart or lung disease.
- If a participant has a **severe symptom** the participant will be taken off the mountain immediately by Medic Guide.
- If the participant has a **persistent mild symptom** that does not resolve in 1 hour, the participant will be taken off the mountain to a lower elevation.  
(Adapted from: <https://medlineplus.gov/ency/article/000133.htm>)

## APPENDIX D

**Hypothermia** – Occurs when the body temperature falls below 95 degrees F; When your body temperature drops, your heart, nervous system and other organs can't work normally. Left untreated, hypothermia can lead to complete failure of your heart and respiratory system and eventually to death.

- **Symptoms:** shivering, exhaustion, confusion, fumbling hands, slurred speech, drowsiness, slowed shallow breathing, loss of consciousness
- **Treatment:** warm individual or area – put handwarmers or hot waterbottle on femoral/groin artery site, armpits; avoid briskly rubbing area in case of frostbite; drink hot drinks; remove wet clothing; wrap in blankets or sleeping bag if available


(Adapted from:

<https://www.mayoclinic.org/diseases-conditions/hypothermia/symptoms-causes/syc-20352682>)

# APPENDIX E

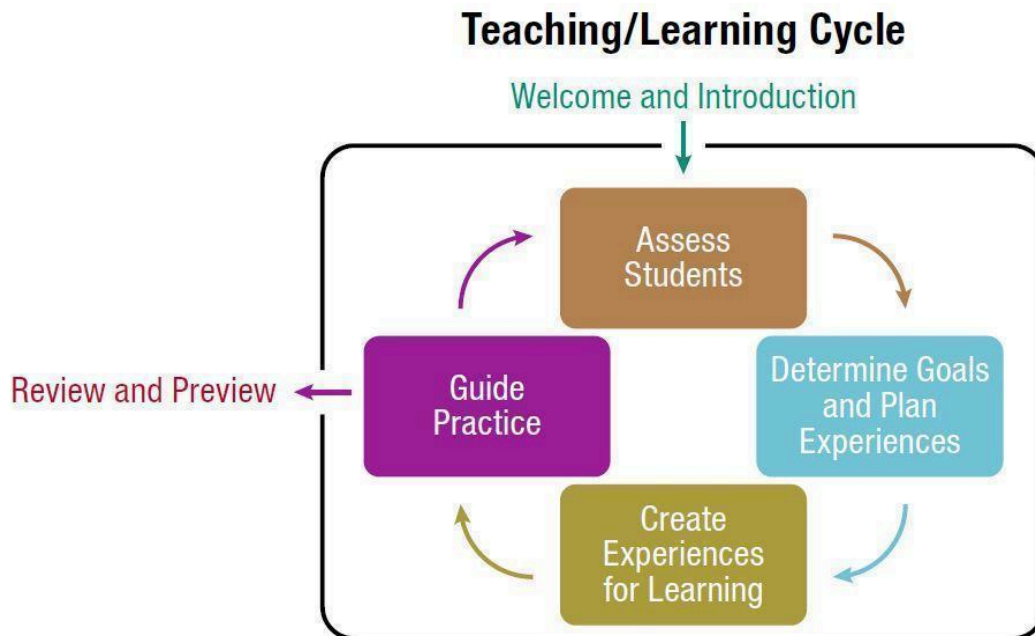
## Heat Related Illnesses

HEAT-RELATED ILLNESSES	
WHAT TO LOOK FOR	WHAT TO DO
<b>HEAT STROKE</b>	
<ul style="list-style-type: none"><li>• High body temperature (103°F or higher)</li><li>• Hot, red, dry, or damp skin</li><li>• Fast, strong pulse</li><li>• Headache</li><li>• Dizziness</li><li>• Nausea</li><li>• Confusion</li><li>• Losing consciousness (passing out)</li></ul>	<ul style="list-style-type: none"><li>• Call 911 right away-heat stroke is a medical emergency</li><li>• Move the person to a cooler place</li><li>• Help lower the person's temperature with cool cloths or a cool bath</li><li>• Do not give the person anything to drink</li></ul>
<b>HEAT EXHAUSTION</b>	
<ul style="list-style-type: none"><li>• Heavy sweating</li><li>• Cold, pale, and clammy skin</li><li>• Fast, weak pulse</li><li>• Nausea or vomiting</li><li>• Muscle cramps</li><li>• Tiredness or weakness</li><li>• Dizziness</li><li>• Headache</li><li>• Fainting (passing out)</li></ul>	<ul style="list-style-type: none"><li>• Move to a cool place</li><li>• Loosen your clothes</li><li>• Put cool, wet cloths on your body or take a cool bath</li><li>• Sip water</li></ul> <p><b>Get medical help right away if:</b></p> <ul style="list-style-type: none"><li>• You are throwing up</li><li>• Your symptoms get worse</li><li>• Your symptoms last longer than 1 hour</li></ul>
<b>HEAT CRAMPS</b>	
<ul style="list-style-type: none"><li>• Heavy sweating during intense exercise</li><li>• Muscle pain or spasms</li></ul>	<ul style="list-style-type: none"><li>• Stop physical activity and move to a cool place</li><li>• Drink water or a sports drink</li><li>• Wait for cramps to go away before you do any more physical activity</li></ul> <p><b>Get medical help right away if:</b></p> <ul style="list-style-type: none"><li>• Cramps last longer than 1 hour</li><li>• You're on a low-sodium diet</li><li>• You have heart problems</li></ul>
<b>SUNBURN</b>	
<ul style="list-style-type: none"><li>• Painful, red, and warm skin</li><li>• Blisters on the skin</li></ul>	<ul style="list-style-type: none"><li>• Stay out of the sun until your sunburn heals</li><li>• Put cool cloths on sunburned areas or take a cool bath</li><li>• Put moisturizing lotion on sunburned areas</li><li>• Do not break blisters</li></ul>
<b>HEAT RASH</b>	
<ul style="list-style-type: none"><li>• Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)</li></ul>	<ul style="list-style-type: none"><li>• Stay in a cool, dry place</li><li>• Keep the rash dry</li><li>• Use powder (like baby powder) to soothe the rash</li></ul>



## APPENDIX F

### [Teaching/Learning Cycle](#) (video)



- **Assess the Student**
  - Before you can build a lesson plan for the day, you need to assess your student's physical abilities and technical understanding. Warm-up activities will give you an opportunity to see how comfortable your guests are on snow, while building good group rapport. Observe their movements, stance, balance, and agility.
- **Determine Goals and Plan Experiences**
  - Ask questions about their goals and motivations for taking a lesson.
  - As the lesson progresses, remember to make sure the group goals align with what each student wants to learn and their motivations for taking a lesson.
- **Create Experiences for Learning**
  - Organize students and the lesson environment by choosing appropriate terrain based on ability and snow conditions. Interact with support, and encourage your students.
- **Guide Practice**

- Create space to spend one-on-one time with each of your students while others practice or explore movements. Repetition of movements anchors the actual learning and sliding experience. Guided practice also lets you handle an ability split. Challenge your more advanced students with difficult tasks while you spend individualized time on guests who may be struggling. This also gives students independence while allowing you individualize the lesson.
- Review and Preview
  - At the end of the lesson, make sure to review the experience, preview the next lesson, and invite your students back to your school and the sport. The debrief is an opportunity for your students to discuss their progress and the goals they accomplished. This content should come from the student. It is your job to facilitate the debrief and make a link to what another day on snow would do for them.  
(Adapted from: “Delivering the Beginner Experience” Course, PSIA/AASI)

## **APPENDIX G**

### **Different Learning Styles**

VAK Model - Learning Preferences - create multisensory lessons (describe a skill, demonstrate a skill, then have them try the skill)

- V - Visual - pictures, images and demonstrations
- A - Auditory - descriptions, talking about experiences
- K - Kinesthetic - process through feelings and experiences

(Adapted from: “Delivering the Beginner Experience” Course, PSIA/AASI)

## **APPENDIX H**

### **Hiking Ratings**

- Grades
  - 1 - < 6 mi
  - 2 - 6-10 mi
  - 3 - 10-14 mi
  - 4 - 15-19 mi
  - 5 - 20+ mi

- Elevation Gain - 1,000 ft in 1 mile is steep
  - A - <1,000 ft
  - B - 1,000-1,999 ft
  - C - 2,000-2,999 ft
  - D - 3,000-3,999 ft
  - E - 4,000 +

(Adapted from Sierra Club, ["Hike Rating System"](#))

Updated 10/19/24