



# FIELD RESEARCH SAFETY HAZARD GUIDELINE

## ALTITUDE SICKNESS (AMS)

Hazards	<b>Potential Hazards</b>	<p>Altitude sickness, also known as acute mountain sickness (AMS), can occur when ascending to high altitudes. This fact sheet provides guidelines and safety precautions to ensure the well-being of researchers in high-altitude environments. It is essential to follow these guidelines and take appropriate precautions to prevent altitude sickness and related complications.</p> <p>Altitude sickness can range from mild symptoms such as headache, dizziness, and fatigue to more severe forms like high-altitude pulmonary edema (HAPE) and high-altitude cerebral edema (HACE), which can be life-threatening.</p>
Hazard Controls	<b>Personal Protective Equipment</b>	<ul style="list-style-type: none"> <li>• First Aid Kit</li> <li>• Supplemental Oxygen Supply</li> <li>• Altimeter</li> </ul>
	<b>Preparation and Training</b>	<ul style="list-style-type: none"> <li>• Assess your medical fitness before conducting research at high altitudes. Consult with a healthcare professional to determine if you have any pre-existing conditions that may increase the risk of altitude sickness.</li> <li>• Gradually acclimate yourself to higher altitudes by spending a few days at intermediate elevations before ascending to higher altitudes.</li> <li>• Stay well-hydrated and avoid excessive alcohol consumption, as dehydration can exacerbate altitude sickness symptoms.</li> <li>• Get familiar with the signs and symptoms of altitude sickness, as well as the appropriate response and treatment.</li> <li>• It is recommended you take courses in: <ul style="list-style-type: none"> <li>• <b><u>Wilderness First Aid</u></b></li> </ul> </li> </ul>
	<b>General Work Practice Procedures</b>	<ul style="list-style-type: none"> <li>• Ascend slowly: Take the time to acclimatize and allow your body to adjust to higher altitudes. Avoid rapid ascents, especially above 9,000 feet (2,743 meters). Gradual ascent reduces the risk of altitude sickness.</li> <li>• Maintain a steady pace while climbing. Avoid overexertion and take regular breaks to rest and hydrate. Pace yourself and listen to your body's signals to prevent fatigue and potential altitude sickness.</li> <li>• Consume a high-carbohydrate diet to provide the necessary energy for your body to cope with altitude. Include foods like whole grains, fruits, and vegetables in your meals to fuel your body and aid in acclimatization.</li> <li>• Practice good hydration by drinking plenty of fluids, even if you do not feel thirsty. Dehydration can exacerbate altitude sickness symptoms. Water, sports drinks, and herbal teas are recommended.</li> </ul>

		<ul style="list-style-type: none"> <li>• Monitor your fellow researchers for signs of altitude sickness and communicate openly about any symptoms or concerns. Support each other in adhering to safety practices and watching out for early signs of illness.</li> <li>• If symptoms of altitude sickness, such as headache, nausea, shortness of breath, or dizziness, occur, take them seriously. Descend to a lower altitude immediately and seek medical assistance if the symptoms worsen or persist.</li> </ul>
Other	Waste	Containerize, remove, and properly dispose all generated waste when you leave the area.
	Emergencies	<ul style="list-style-type: none"> <li>• Establish communication protocols: Before embarking on field research at high altitudes, establish a communication plan with your team and ensure you have a reliable means of communication. This can include satellite phones, two-way radios, or other communication devices that work effectively in mountainous regions.</li> <li>• Designate a contact person: Identify a designated contact person or supervisor who is aware of your location, itinerary, and expected return time. Provide them with regular updates on your progress and communicate any changes to your plans.</li> <li>• Familiarize yourself with local emergency services: Research and note down emergency contact numbers specific to the region where you will be conducting field research. Be aware of the nearest medical facilities and their capabilities for treating altitude sickness and related conditions.</li> <li>• Carry a well-stocked first aid kit: Ensure your first aid kit is equipped with supplies suitable for altitude sickness emergencies. This includes medications prescribed by a healthcare professional, such as acetazolamide (Diamox) for prevention and treatment of altitude sickness. Familiarize yourself with the proper administration and dosage of these medications.</li> <li>• Train in altitude sickness response: Learn how to identify severe symptoms, such as difficulty breathing, confusion, or loss of consciousness, which may indicate high-altitude pulmonary edema (HAPE) or high-altitude cerebral edema (HACE). Understand the appropriate response protocols for these emergencies.</li> <li>• Implement buddy system and monitor team members: Establish a buddy system where team members regularly check on each other's well-being and monitor for any signs of altitude sickness. Encourage open communication and a supportive environment where anyone can report symptoms or concerns without hesitation.</li> </ul> <p><b>Altitude Sickness Emergency Protocol:</b></p> <ul style="list-style-type: none"> <li>• Descend to lower altitude: If anyone experiences severe symptoms of altitude sickness, such as those associated with high-altitude pulmonary edema (HAPE) or high-altitude cerebral edema (HACE), immediate descent to a lower altitude is crucial. Descend at least 1,000 to 2,000 feet (300 to 600 meters) to relieve the stress on the body and allow for recovery.</li> <li>• Administer first aid and support: While descending, administer appropriate first aid as per your training and the contents of your first aid kit. This may include providing supplemental oxygen if available, administering prescribed medications, and closely monitoring the affected individual's vital signs.</li> </ul>

		<ul style="list-style-type: none"> <li>• Seek medical assistance: Once at a lower altitude, seek immediate medical assistance for the affected individual. Contact the local emergency services and provide them with all relevant information about the individual's condition, location, and any administered treatments. Follow their guidance for further care and evacuation, if necessary.</li> <li>• Document and report: Keep detailed records of the altitude sickness emergency, including symptoms observed, actions taken, and medical treatments provided. Report the incident to your university's designated authority or supervisor as soon as possible for documentation and follow-up procedures.</li> </ul>
	<b>Reference and Additional Resources</b>	<ul style="list-style-type: none"> <li>• <a href="#">Handbook</a> for lay people traveling to high altitude from MedEx.</li> <li>• <a href="#">Harvard</a> article on altitude sickness</li> </ul>
	<b>Questions</b>	Contact Environmental Health and Radiation Safety (EHRS) at (215) 707-2520