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# **CONSENSUS STATEMENTS OF THE UIAA MEDICAL COMMISSION**

## **VOL: 7**

### **How to Check the Quality of a Commercially Organized Trek or Expedition**

Intended for Doctors, Interested Non-medical Persons  
and Trekking or Expedition Operators

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## Introduction

As the number of mountaineers who are joining organised treks or expeditions continues to increase, so too does incidence of altitude-related diseases. Shlim (1992) stated that 77% of deaths that were caused by high altitude pulmonary oedema (HAPE) or cerebral oedema (HACE) occurred in organized trekking groups – but only 40% of all trekkers were part of an organized tour [1]. In other words: an individual's risk of dying from an altitude-related problem was increased by 2.4x at the moment of booking! Although the situation may have improved since Shlim published the data, at least technically simple high altitude trekking peaks with easy access and ascent such as Kilimanjaro or Aconcagua, or the Everest trek with fly-in to Lukla - are potentially still dangerous because of the altitude profile undertaken by those leading such treks.

**The following recommendations should assist the mountaineering tourists to check as far as is reasonably possible, whether their organization has taken into account potential health risks when planning the trip itinerary. It is also hoped that by raising the awareness of the health and other risks involved in high altitude climbs, future organised trips will reflect these changes. Points to clarify before booking – altitude, temperature, and lines climbed by the expedition**

- **Altitude profile** of access and ascent to the highest point of the tour
  - Does it comply with the “Gold Standard” of *‘not climbing too fast too high’*?
    - Beyond 2,500m an increase of sleeping altitude should not exceed 300 to 500m per day
    - **Note:** On many trips the second night is planned at 3500 to 4000m! [2]
  - Special attention should be paid to the altitude profile of tours that start walking from high roads (e.g. in Tibet or parts of South America etc.). Rest days should be planned before further ascent or travel by vehicle to even higher regions is started.
    - **Note:** prefer “defensive” altitude profiles for several reasons: If the climate where the expedition takes place is significantly warmer or colder than home. It may also take a longer for your body to acclimatise by adapting to the initial change of exercising in the new temperature requiring changes in sweat, urine loss, increased physical activity levels, etc.
- **Information given by the organization**
  - Is the general information detailed enough to get a true idea about the tour and its organization?
    - i.e..detailed information about ascent profile, food provision and hygiene, care and insurance including the porters and the rest of the local staff
  - Specific demands of the tour

- Technical demands (i.e.. grade of a climb, steepness of ice, etc.)
- Medical expectations – what are the limitations of the medical equipment being carried (ie basic first aid kit, any antibiotics, anti-malarials if appropriate, what pain relief, etc). What is the distance to the closest hospital, and what form of transport exists to get to the closest hospital. Does your insurance cover helicopter rescue? Is a member of the trekking team able to accompany an ill trekker in an emergency without the rest of the group being affected?
- Physical demands
  - Sometimes it may be difficult to “read” the information given. Typical tour descriptions and their interpretations are listed in Table 1
- Typical health risks at the destination and how to prevent them
  - i.e. infectious diseases/vaccinations recommended, altitude-related diseases, water and waste hygiene etc.
  - It may be even better if the organization doesn’t give detailed information itself, but advises the traveller to contact a physician who specialises in travel and altitude medicine.
- Advice when booking comprehensive travel and medical health insurance.
  - **Note:** Some travel health insurances exclude search and rescue costs and/or repatriation costs! These are useless for trekkers and expeditions.
  - **Note:** Some travel health insurances exclude “expeditions”, while others have very limited and individualized definitions. Clarify in detail whether your trip will be covered or not!
- Does the organization offer a personal service to answer specific questions directly? Hotline to experienced personnel (not to a call centre!)
  - Meeting of the trekking / expedition group before departure
- Information about risk tactics, i.e. how the group should react and work in case of alpine danger, emergencies or accidents.
  - Is the guide / leader or any other person fully qualified in advanced remote area First Aid and alpine rescue (techniques, tactics, psychology)?
    - **Note:** data have shown that the knowledge of many leaders / guides in alpine First Aid is similar to those of the clients (i.e. basic!) [3]. Self-evaluation of knowledge is not sufficient [3]!

- A normal First Aid course qualification is not sufficient, because its topics focus on emergencies in an urban environment. An additional training in mountain medicine is a must as the body's physiology changes at altitude, and there are unique altitude-induced diseases [4]!
- The presence of a physician does not guarantee a sufficient medical care at high altitude! He/she must have specific (last refreshing <3 yrs. ago) training in mountain medicine [3]!
- In the event of a trekker, leader, or porter falling sick or being injured, is it realistic to stop the trip and to descend with the patient being accompanied by a person experienced enough to manage the demands of the terrain as well as medical problems which may be expected on the way back?
  - **Note:** Many organizations will answer this question with “of course” or “no problem” (see “No problem”-planning below!).
  - A person who suffers from acute disease should know that a change of the tour's schedule is normally a realistic option!
  - Has the organization anticipated realistic plans on how to repatriate a person if necessary?
- Are the company's plans regarding rescue and remote area communications realistic (i.e. satellite phones etc)?
- Does the organization provide any kind of medical emergency kit for the group?
  - Content?
  - **Note:** Any drug personally taken for a chronic disease or for prevention (e.g. malaria) must be provided by the person him-/herself! Carry adequate amounts plus reserves. Distribute it to two loads in case one should be lost. Make sure these drugs accompany the patient/s if they need to descend or be evacuated.
- If oxygen or a hyperbaric chamber is carried, is any member from the organization – i.e. the leader – trained and competent to use it in an emergency?
  - **Note:** there are some cases of deaths caused by incompetent person/s or inappropriate use of hyperbaric chambers! Although it was not possible to prove these cases by UIAA MedCom, any incorrect use of hyperbaric chambers may put the patient at risk (for details see UIAA MedCom Standard No.3 “Portable Hyperbaric Chambers”)
  - If a portable hyperbaric chamber is included in the tour, it should be an integral part of the tour's planning. It should be made clear who in the group is trained and competent

to use oxygen / hyperbaric chamber, and what strategy is in place to buy time whilst preparing for descent in case of emergency.

- Does the organization have a transparent risk management policy or statement?
  - Clients should avoid joining an organization that fails to provide statistics about previous accidents/emergencies that happened on their trips, how they were managed and the outcome, or too much data emphasising previous successful ascents!
- **Personal information required by the organization**
  - This information should be requested before the client has booked the trip:
  - Alpine experience and physical fitness of the potential client
  - Any relevant individual's past medical history should be requested by the person responsible for medical care during the trip (i.e. have they travelled to altitude before, did they experience any altitude-related diseases?)
- **Whose responsibility is it to determine a trekker's suitability to undertake the expedition?**
  - Does the organization determine whether the client fits with the demands of the tour, ie alpine experience, climbing abilities, and physical fitness?
  - Does the organization demand any kind of health check of the potential client?

### **Warning points that should alert a potential client**

- "No problem"-planning
    - Planning a trekking or expedition is always a difficult task. Be cautious if you get the answer "no problem" to any question you pose!
  - "No risk"-information
    - Any organization/dealer, who offers trekkings or expeditions with a "no risk" mentality or comment, should be avoided by potential clients. By its very nature any adventure expedition does carry an element of risk and it is the company's function to appreciate and assess this risk.
    - Be very cautious of organisers that answer "No" when asked about any accidents or "near misses" that occurred during previous trips and the organizer does not provide such information.
  - "Drugs for acclimatization"
    - There are drugs which can help cope with symptoms of altitude disease. These are normally not required. An organization, which
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recommends drugs for acclimatization is potentially dubious and may be going too high too quickly. General use of drugs is not recommended with a few exceptions as outlined in UIAA MedCom Consensus Statement No.2.

- If any drug intake for the prevention of altitude diseases is recommended, it must be given with detailed information as to why it is recommended for the specific destination and why Gold Standard of acclimatization alone may not be sufficient.
- Unclear information
  - Any information which doesn't clearly describe crucial points of the tour (e.g. altitude profile) is suspicious!
- Fairness and correctness to the local people involved in the tour
  - Does the organisation understand and apply the principles of looking after the care of their porters and employed staff to the same standard as that expected by their clients, as suggested by the International Porter Protection Group (IPPG)? See appendix!

## **Conclusion**

Clients may pay more for slower treks and have to take more valuable holiday time for the trip, but the more reputable companies do plan a sensible ascent profile with time for acclimatization to minimize the risk of altitude sickness. This extra time and money may enable you to truly enjoy, rather than endure, the holiday of a lifetime and tempt you to return again to the high mountains!

**Table 1: Typical phrasing to describe the demands of a tour and how to interpret them**

Phrasing	Interpretation	Examples
"Easy hiking at moderate altitude"	<ul style="list-style-type: none"> <li>• Altitude of maximal 2,500-3,000m</li> <li>• Maximal 1,000m altitude per day</li> <li>• Walking per day maximal 6 hours</li> </ul>	<ul style="list-style-type: none"> <li>• Toscana</li> <li>• Island hiking (Azores, Mallorca, Teneriffa)</li> <li>• Alpine hiking from hut to hut</li> </ul>
"Mountaineering up to 6,000m without difficult terrain"	<ul style="list-style-type: none"> <li>• About 8-10 hours walking per day</li> <li>• Increased demands caused by altitude</li> <li>• Experience in alpine hiking necessary</li> <li>• Adequate physical fitness (&gt;2.5 W/kg body weight) and good health status necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Kilimanjaro</li> <li>• Mt. Kenya circular route</li> </ul>
"Trekking without particular demands"	<ul style="list-style-type: none"> <li>• No or easy summits up to about 5,600m</li> <li>• About 4-8 (maximal 10) hours walking per day</li> <li>• Adequate physical fitness (&gt;2 W/kg body weight) and good health status necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Annapurna trail</li> </ul>
"Round trip with sightseeing and some ambitious summits up to 6,000m"	<ul style="list-style-type: none"> <li>• About 10-12 hours walking time when summiting</li> <li>• Increased demands caused by altitude</li> <li>• Experience in alpine hiking necessary</li> <li>• Adequate physical fitness (&gt;2.5 W/kg body weight) and good health status necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Volcanos in Mexico or the easier ones in South America</li> <li>• Mt. Ararat</li> </ul>
"Difficult alpine tour"	<ul style="list-style-type: none"> <li>• Alpine experience absolute necessary</li> <li>• Expect time for ascents of up to 10 hours (plus several hours for descent)</li> <li>• Good health status and excellent physical fitness necessary</li> <li>• Will power and good mental health necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Chimborazzo</li> <li>• Elbrus</li> <li>• Long alpine traverses</li> </ul>
"Extreme trekking with expedition nature"	<ul style="list-style-type: none"> <li>• Glacier traverses, often difficult terrain</li> <li>• Alpine experience necessary</li> <li>• Hiking hours per day: 10 – 12</li> <li>• Excellent physical fitness necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Konkordia trekking</li> </ul>
"Expeditions up to 7,500m"	<ul style="list-style-type: none"> <li>• Only for experienced mountaineers who are able to act autonomous and who have an excellent physical fitness and mental health</li> <li>• Ability to toil oneself</li> <li>• Team spirit</li> <li>• Long-term experience in the Western Alps or comparable mountains</li> <li>• Climbing time per day sometimes &gt;12 hours</li> </ul>	<ul style="list-style-type: none"> <li>• Mt. McKinley</li> <li>• Pik Lenin</li> </ul>
(continued next page)		

**Table 2 (cont.)**

Phrasing	Interpretation	Examples
"Expeditions to summits >7,500m"	<ul style="list-style-type: none"> <li>• Threshold of professional mountaineering.</li> <li>• Very experienced mountaineers who are able to act autonomous and who present with excellent physical fitness and mental health only.</li> <li>• Some parts of the trip involve difficult terrain and need extended experience in handling safety equipment</li> <li>• Extreme mental strength needed</li> <li>• Great ability to problem solve, as often there will be no chance of rescue in case of emergency!</li> </ul>	<ul style="list-style-type: none"> <li>• Peaks &gt;8,000m</li> <li>• Traverse of Mt. McKinley</li> </ul>

## References

1. Shlim, D.R. and J. Gallie, *The cause of death among trekkers in Nepal*. Int J Sports Med, 1992. **13**(1): p. 74-76.
2. Kupper, T., *Organisierte Berg- und Trekkingtouren - ein faires Geschäft?* Rundbrief der Österr. Ges. f. Alpin- & Höhenmed, 1998. **18**: p. 5.
3. Kupper, T., et al., *First aid knowledge of alpine mountaineers*. Resuscitation, 2003. **58**(2): p. 159-169.
4. Kupper, T., [*Workload and professional requirements for alpine rescue*]. *Professoral thesis at Aachen Technical University / Germany, 2006 (english publication in preparation)*, in *Dept. of Aerospace Medicine*. 2006, Aachen Technical University: Aachen.

## Further Reading

British Standard recommendation for adventurous holidays, available at:

- <http://www.rgs.org/OurWork/Advocacy+and+Policy/Outdoor+learning+and+fieldwork+policy/British+Standards+initiative.htm>
- <http://www.bsi-global.com/en/About-BSI/News-Room/BSI-News-Content/General/News-Content/>
- <http://www.rgs.org/NR/rdonlyres/F6E00DD0-D8AB-42EE-B298-41064020463A/0/InformationaboutstandardsandBS8848.pdf>

## **Appendix: Guidelines of the International Porter Protection Group (IPPG)**

### **1. Trekking ethics**

1. Clothing that is appropriate for season and altitudes encountered must be provided to porters for protection from cold, rain and snow. This may mean: windproof jacket and trousers, fleece jacket, long johns, suitable footwear (leather boots in snow), socks, hat, gloves and sunglasses.
2. Above the tree line porters should have a dedicated shelter, either a room in a lodge or a tent (the trekkers' mess tent is no good as it is not available till late evening), a sleeping pad and a blanket (or sleeping bag). They should be provided with food and warm drinks, or cooking equipment and fuel.
3. Porters should be provided with the same standard of medical care as you would expect for yourself, and life insurance.
4. Porters should not be paid off because of illness/injury without the leader or the trekkers assessing their condition carefully. The person in charge of the porters (sirdar) must let their trek leader or the trekkers know if a sick porter is about to be paid off. Failure to do this has resulted in many deaths. Sick/injured porters should never be sent down alone, but with someone who speaks their language and understands their problem, along with a letter describing their complaint. Sufficient funds should be provided to cover cost of rescue and treatment.
5. No porter should be asked to carry a load that is too heavy for their physical abilities (maximum: 20 kg on Kilimanjaro, 25 kg in Peru and Pakistan, 30 kg in Nepal). Weight limits may need to be adjusted for altitude, trail and weather conditions; experience is needed to make this decision.

### **2. Questions to ask trekking companies:**

1. Does the company you are thinking of trekking with follow IPPG's five guidelines on porter safety?
2. What is their policy on equipment and health care for porters?
3. What do they do to ensure the trekking staff is properly trained to look after porters' welfare?
4. What is their policy on training and monitoring porter care by its ground operator in Nepal?
5. Do they ask about treatment of porters in their post trek questionnaire to clients?

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