



Research in the Himalayas: Improving long-term medical care for women in mountaineering

'Learning to understand female high-altitude physiology'

After around two years of preparation, a major high-altitude medical research expedition involving Swiss participants will once again set off for Nepal in autumn 2027. What makes this expedition special is that the 'International Sisters High Altitude Research Expedition' (ISHARE) to the 7,234-metre-high 'Putha Hiunchuli' will consist exclusively of women. The researchers, led by the core team with Monika Brodmann Maeder as 'Lead Organiser', the two American women Linda Keyes and Martha Tissot van Patot, and the Nepalese Silviya Chaulagain, aim to collect gender-specific data during the ascent on acclimatisation, metabolism and hormonal balance in women of different ages, and to compare this later with corresponding data sets from male mountaineers. This research expedition, which is unique in its form, will last just under five weeks. The search for interested female participants is currently underway. 'Forum Alpinum' interviewed the Bern-based high-altitude physician Monika Brodmann Maeder – who was involved in the founding of the SGGM some 30 years ago – about this special project and its unique challenges.

Interview: Tommy Dätwyler
Photos: Monika Brodmann Maeder

Forum Alpinum (FA): The thing is, crazy ideas need to be put into practice. Even for you, as an experienced high-altitude physician and researcher, this research project is already a major undertaking! How did it all come about in the first place? Who came up with the idea? Monika Brodmann Maeder (MB): As always, ideas like this start with encounters between like-minded people: Linda Keyes, an emergency physician and high-altitude researcher from Colorado, and I were invited to the Diavolezza in autumn 2022 by the medical commission of the UIAA (Union Internationale des Associations d'Alpinisme) and the ISMM (International Society for Mountain Medicine). There, a conference on the theme of 'Women in Altitude', chaired by Urs Hefti, took place for the first time. After that, the topic



: in 2023, we met again at the Winter Congress of the Wilderness Medical Society (WMS), and when an entire session on this topic was organised at the joint WMS and ISMM congress in 2024, the idea of a research expedition by, with and about women emerged. However, the final go-ahead came during the last Hypoxia Meeting in 2025 in Lake Louise, Canada: Martha Tissot van Patot, a high-altitude researcher also from Colorado, was inspired by Linda and me, and by the end of the meeting it was clear: we

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want to organise a joint research expedition. We were struck by the fact that, although around 40 per cent of all high-altitude mountaineers are women today, there is surprisingly little scientific data on female high-altitude physiology. Much of the existing knowledge is

still on studies involving male subjects. Together with female colleagues from the fields of high-altitude medicine, research and the world of expeditions, we wanted to finally tackle this gap in a targeted manner.

This is how ISHARE – the 'International Sisters High Altitude Research Expedition' – came into being. Alongside Linda and Martha, the Nepalese researcher Silviya Chaulagain is now also part of the core group of organisers. The project is already backed by many women and men who have since formed a large international network of female doctors, scientists, female mountain guides and experienced high-altitude mountaineers from various countries. Among others, our advisory board includes not only the first woman to become President of the International Federation of Mountain Guides Associations (IFMGA/UIAGM) from autumn 2026, but also Nobel Laureate Sir Peter J. Ratcliffe and the current head of the Himalayan Database, Billi Bierling. She is the successor to the legendary Himalayan 'bookkeeper', Miss Elizabeth Hawley.

FA: Have you always believed in bringing this idea to fruition? What hurdles have you had to overcome so far?

MB: The vision was ambitious from the outset – and correspondingly challenging. Organising an international research expedition in the Himalayas is no easy task. Added to this was the fact that we deliberately wanted to put together an all-female team: from the female researchers and female mountain guides right through to the Nepalese trekking agency. The biggest challenges so far have been funding, international coordination and scientific planning. At the same time, however, we're also receiving enormous support and a great deal of interest from the research community and the mountaineering scene. That motivates us greatly.





FA: Research in the great outdoors and in the mountains is generally a tough business. Is it a particular challenge to organise such a project exclusively with and for women?

MB: Yes and no. The logistical challenges of a Himalayan expedition are the same. At the same time, however, the all-female setting also opens up new possibilities. Many participants find the project particularly motivating and inspiring. Furthermore, we are able to investigate scientific questions that have often been neglected in the past, such as hormonal influences, the menopause or gender-specific differences in acclimatisation. It is precisely this focus that makes our research expedition scientifically unique. Working with Linda, Martha and Silviya is also very motivating: we are working virtually hand in hand, already have a website and an advisory board comprising impressive figures.

FA: Why was the 7,246-metre-high Putha Hiunchuli chosen as the expedition destination?

MB: Putha Hiunchuli is ideally suited to a scientific high-altitude research project. The mountain allows for a comparatively safe and gradual ascent to high altitudes, which is of great importance for controlled medical examinations. At the same time, it reaches altitudes above 7,000 metres, where the strain on the human body becomes extreme. With the exception of the valley leading to Phoksundo Lake and Shey Gumpa, Dolpo is a region that is largely undeveloped for tourism. Our mountain lies at the end of a remote but beautiful valley that is strongly reminiscent of Tibet. It offers us the necessary peace and seclusion we require both for the ascent of Putha Hiunchuli and for our research work in field conditions.

FA: There will be two groups of participants on the expedition: a trekking group heading to base camp and a summit group. What is the reasoning behind this organisational structure?

MB: We want to compare different levels of altitude exposure. Whilst the trekking group will provide important data on acclimatisation up to around 5,000 metres, the mountaineering group will gain additional insights from extreme altitudes. This will enable us to identify changes in

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metabolism, the cardiovascular system, sleep, hormonal balance and well-being across different altitude levels. At the same time, this model enables women with varying levels of mountaineering experience to take part.

FA: What are the research team’s medical objectives? What exactly are they aiming to investigate?

MB: Our overarching aim is to gain a better understanding of women’s health in the mountains. The focus is on questions relating to acclimatisation, the influence of hormones and differences between pre-menopausal and post-menopausal women. We are also interested in differences between Sherpa and non-Sherpa women, as the Sherpas have been adapted to high altitudes for generations. The expedition aims to help develop new hypotheses on women’s high-altitude physiology and to improve the long-term medical care of women in mountaineering.





7,246 metres high: Putha Hiunchuli

Putha Hiunchuli (also known as Dhaulagiri VII) is the westernmost peak in the Dhaulagiri Himal range to rise above 7,000 metres. The Dhaulagiri mountain range separates the Dolpo region in the north from the 8,167-metre-high Dhaulagiri to the south. The districts of Dolpa, Myagdi and Rukum meet at the summit. The summit of Putha Hiunchuli was first climbed in 1954. It is considered a relatively easy 7,000-metre peak to climb.

FA: Has the research programme already been approved by the ethics committee?

MB: We are currently in the preparation and submission phase. The plan is to submit the research projects jointly to the Nepal Health Research Council Ethics Commission. All sub-projects must comply with international guidelines on research ethics.

FA: Why was this scientific focus chosen?

MB: Women have so far been significantly under-represented in high-altitude research. Many medical recommendations are based on data from men. At the same time, it is known that hormonal factors and gender-specific differences could play an important role, for example in oxygen supply, sleep quality or the risk of altitude sickness. There is a great need for research in this area.

FA: Who is funding the research expedition?

MB: Active fundraising is underway. The costs of the trek or the ascent of Putha Hiunchuli – that is, the mountaineering part – must be covered individually by the participating women themselves. Research groups wishing to take part with a specific project must finance and organise themselves. Linda, Martha, Silviya and I, as the overall organisers, will assess and coordinate the project proposals. We will also take responsibility for submitting a joint ethics application in Nepal.

FA: What requirements must interested women meet? What do you offer the participants?

MB: We are looking for motivated and healthy women who are interested in mountaineering and science. For the

summit group, solid high-altitude mountaineering experience is required, whilst the trekking group is also open to women without expedition experience. Participants will have the opportunity to be part of a research project that is unique on an international scale and to work closely with female scientists and mountaineers from various countries.

For the selection of the summit group, one of the female mountain guides from Europe travelling with us will carry out an assessment of mountaineering skills. We aim to put together a summit group of 20 female mountaineers and a trekking group with a maximum of 30 participants. Registration for both groups is available via our website. We have been absolutely inundated with interest in our project. Currently, over a hundred women have already expressed their interest.

FA: Will you be reporting on the expedition as you go along?

MB: We'd like to actively document the expedition – through traditional media, social media and our website. It's important to us to highlight not only the research, but also the stories and experiences of the women taking part. It's still unclear to what extent we'll be able to report during the expedition, as internet coverage in this remote region of Nepal isn't comparable to the situation in the Khumbu Valley.

We are in contact with a journalist from Swiss television who has expressed an interest in making a documentary about ISHARE.



Who would like to take part?

We are still looking for participants for the international women's expedition ISHARE 2027. We are seeking healthy and motivated women to join a trekking or mountaineering group in Nepal. The aim of the project is to research female high-altitude physiology in the Himalayas.

Requirements

- female
- good physical health
- Interest in mountaineering and research
- For the summit group: alpine experience and excellent physical fitness
- Willingness to undergo medical examinations during the expedition

Duration

Trekking to base camp (4910m): 20 days

Including the ascent of Putha Hiunchuli (7,248 m): 30 to 35 days (neither of these figures includes the journey to and from Kathmandu)

Further information: www.isharemountains.org