

Eurac Research is looking for **volunteers** to participate in a physiological study

Cold, altitude, or both? **Why do humans struggle** **at high-altitude?**

The landscape of Tyrol and South Tyrol is dominated by mountainous terrain with more than 500 peaks over 3,000 m.a.s.l as well as 600 glaciers. However, despite their beauty, mountainous environments can be inherently dangerous in part due to a decrease in atmospheric pressure which causes a reduction in available oxygen. When there is not enough oxygen, there is higher risk of altered cognitive function and the development of acute mountain sickness. In addition, cold temperatures, reduced humidity and strong winds all increase the risk of cold injury in the mountains. Surprisingly, very little is known about the combination of cold temperatures and high-altitude related hypoxia. In this first of its kind study, the combination of two environmental stressors will be investigated to analyze impacts on the risk of hypothermia, cold injuries and cognitive function.

How does the study work?

Participants will spend three 24-hour periods inside the **terraXcube** - our extreme climate chamber. Once at a simulated altitude of 3,800 m.a.s.l., once at a chilly 7.5 °C and another time at both altitude and in the cold. Before and during the trial, blood samples will be taken, physical activity will be monitored and non-invasive ocular ultrasound measurements and other performance metrics will be recorded.

Who can participate?

Anyone between the ages of 18 and 45 can participate as long as they meet the following requirements:

- have no medical conditions
- follow normal physical activity
- do not use tobacco, alcohol or drugs regularly

When and where?

The study will take place between November 6th and 29th, 2024. Participants will spend three full 24-hour periods in the **terraXcube** in total. All experiments will be undertaken in the terraXcube at the NOI Techpark, via Ipazia 2, Bolzano, Italy.



FOR MORE INFORMATION AND REGISTRATION

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