

Eurac Research is looking for **volunteers** for a physiological study

Physical activity and high altitude: how the heart and lungs respond?

The **REACH** study (Response to Exercise at High Altitude in Congenital Heart Disease) aims to understand how the heart and lungs respond to physical exercise at high altitude (3,000 meters). The study will compare exercise responses in individuals with stable congenital heart disease and control participants to assess physiological adaptation to reduced oxygen availability. The results will contribute to the development of clinical recommendations to support safer physical activity and sports in mountain environments. The study is carried out with the scientific contribution and multidisciplinary collaboration of researchers from the **Mountain Clinic, the University of Padua, and the South Tyrolean Health Authority**. The test activities will take place at terraXcube, Eurac Research's environmental simulation facility in Bolzano, which enables the controlled reproduction of high-altitude conditions.

HOW DOES THE STUDY WORK?

The study takes place over two days. On the **first day**, at low altitude, participants will undergo an assessment including a medical examination, cardiac and vascular ultrasound examinations, and a cardiopulmonary exercise test as well as responding to a set of questionnaires. The **second day** involves spending time in simulated high-altitude of 3,000 m.a.s.l., during which subjects will engage in controlled physical activity. During the exposure to altitude, heart rate, blood pressure, breathing, oxygen saturation, and cardiovascular function will be monitored using cardiac and vascular ultrasound examinations. The study is conducted in complete safety, with the constant presence of specialized medical staff.

WHO CAN PARTICIPATE?

We are looking for participants aged between 14 and 40 years, belonging to one of the following groups:

Volunteers with no known cardiac or respiratory diseases

Individuals with stable congenital heart disease, in particular:

- Corrected aortic coarctation
- Atrial septal defect (ASD)
- Ventricular septal defect (VSD)

WHEN AND WHERE WILL THE STUDY TAKE PLACE?

The study will take place between April and November 2026 in the terraXcube at the NOI Techpark, Via Ipazia 2, Bolzano, Italy.



For more information and registration

Please contact Nicola Borasio:

reach@eurac.edu

Mountain Clinic, Institute for Mountain Emergency
Medicine, Eurac Research,
Via Ipazia 2 - 39100 Bolzano (Italy)

To allow us to process your data in a manner that complies with the law, please read the notice below and add it to your application email:

"I have read and understood the privacy policy at <http://www.eurac.edu/en/aboutus/Jobs/Pages/default> and authorize Eurac Research to process my personal data in accordance with EU Regulation No. 2016/679 and national law."