This summary document is designed to supplement the APEX 7 information evening, and can be used as reference for those considering volunteering on APEX 7.

What is APEX?
APEX (altitude physiology expeditions) is a charity, founded in 2001 by a group of medical students at the University of Edinburgh which aims to conduct high altitude medical research expeditions looking at the effects of hypoxia on human physiology. Since 2001, APEX has successfully run 6 expeditions to South America (most recently APEX6 in June/July 2022). Research output from previous expeditions includes a multitude of publications in reputable medical journals, helping contribute knowledge and information to further our understanding of the impacts of hypoxia on how the human body works.

High Altitude/Hypoxia
When you ascend to altitude, the proportion of oxygen in the air stays exactly the same as it is at sea level (21%), but the actual concentration of oxygen in the air changes, along with all the other components of air. At ~5000m, there is approximately 50% of the oxygen that there is at sea level.
When individuals ascend to altitude, they will likely experience symptoms belonging to the category of AMS (acute mountain sickness). AMS symptoms include:

- Headache
- Dizziness
- Nausea/Vomiting
- Difficulty sleeping
- Difficulty concentrating
- Loss of appetite
- Tiredness
- Flu-like symptoms

AMS is scored on a scale (Lake Louise Scoring system) and is used to grade the severity of symptoms (from 0 to 15). The Lake Louise system will be in use throughout the duration of APEX7.

More extreme forms of AMS can progress to conditions known as HAPE (High altitude pulmonary oedema) or HACE (High altitude cerebral oedema). Both these conditions are VERY RARE, but severe. HAPE has an incidence of 1-6% and HACE 1%. Treatment of HAPE or HACE involves immediate descent to lower altitudes for a full recovery. All these risks can be minimised by gradual ascent to altitude and adequate periods of acclimatisation.

**APEX 7 Outline**

**Country**
Bolivia

**Dates**
Saturday 28th June 2025 - Sunday 13th July 2025

**Accommodation**
La Paz Hostel (TBC) @3800m
Huayna Potosi Base Camp @4880m
APEX 7 Details
The next APEX expedition (APEX 7) is scheduled to take place from Saturday the 28th of June until Sunday the 13th of July for a period of 16 days and 15 nights. The next expedition will follow a similar logistical plan to previous APEX expeditions with teams flying in to El Alto International Airport (La Paz) at an altitude of 4050m before spending the following days in the centre of La Paz (hostel tbc) at an altitude of 3800m. After this time, the team will ascend to Huayna Potosi basecamp via buses at an altitude of 4880m to spend the next leg of the expedition. On the penultimate day, teams will descend back down to La Paz for a final day of research before the formal expedition finishes that evening with a team dinner!

June 28th to July 3rd
Arrive in La Paz, Acclimatize, Initial data collection, Explore

July 3rd to July 11th
Arrive at Huayna Potosi, Acclimatize, Data collection, Explore

July 11th to July 13th
Descend to La Paz, Final data collection

July 13th 00:00
End of Expedition 😔

July 13th onwards
Explore South America!!
APEX 7 Safety

Volunteer safety on APEX7 is a top priority for the committee and is paramount to the success of the expedition. To help minimise risks associated with travel to high altitude and another culture, there will be 4 Expedition Doctors on the trip available 24/7. The doctors are on expedition solely for the safety of our volunteers and committee and all doctors are specialists in the field of expedition medicine, altitude medicine, remote and rural medicine and GP and all have experience working in similar climates. Additionally, whilst at base camp, in the event of any serious medical issues, there will be multiple 4x4 Jeeps available 24/7 to take sick/injured volunteers/committee down to La Paz in the company of one or more of the expedition doctors. In the unlikely event that volunteers or committee need to be evacuated to lower altitudes than that of La Paz, contingency plans and funds will be in place for air travel to Lima (sitting at sea level and with strong medical support and travel links).

APEX 7 Research

APEX at its essence was set up to conduct medical research and contribute knowledge and findings to the scientific community and APEX7 strives to be no different. Research findings from APEX (and hopefully in future, APEX7) have been used internationally to improve patient care, including those critically unwell and those travelling to high altitudes. Research conducted on APEX is unique in the fact that it is solely run by students at the University of Edinburgh.

The APEX 7 committee is in the process of planning out the many research projects being undertaken on the expedition, with more details to follow but current research topics include:

- Thermogenesis
  - How does hypoxia affect brown adipose tissue metabolism?
- Studies on the effects of hypoxia on neutrophil and immune responses
- The links between mood disorders and acute mountain sickness
Being a volunteer on APEX 7 allows multiple research opportunities for you:

- Participation in research studies as a subject
  - You will consent to all research that you want to take part in advance of studies
- Chance to take part in medical research and be part of cutting edge science and be exposed to medical research possibly for the first time

At baseline testing and prior to the expedition, all volunteers will be fully informed of requirements of each study and any volunteer can consent to any part of the studies they feel comfortable with. Some studies may involve blood samples and other medical procedures, but not all studies are likely to require this.

**Expectations Of Volunteers**

Being a part of APEX7 is an incredibly unique experience and opportunity and allows volunteers to explore aspects of culture and academia otherwise inaccessible. There are a couple of expectations of our volunteers, but not a lot!

**Pre-Expedition**

Baseline Testing and Samples = Before we can go on the expedition, for our various research projects, we will be needing some baseline data and samples from our volunteers. This will likely be held at the QMRI down at the RIE, but times and locations are subject to change. Baseline testing will involve various samples and may include blood samples etc, but this will only be applicable to the research projects that you, as a volunteer, have consented for.

Team Building events/Socials/Weekends away = In order to get to know all the volunteers and all the committee, we will be hosting socials and teambuilding events in the months preceding the expedition. These are optional but we would expect volunteers to come to at least a couple. You are spending two weeks up a mountain with each other after all!!
Medical talks/Information evenings = In the time leading up to the expedition, there will be multiple information sessions for the committee to give you more detail about what the expedition will be like, in addition to medical talks from our expedition doctors to help prepare you the best you can before we jet off to South America.

**On Expedition**

Data collection = Whilst on the expedition itself, there will be various points each day where we require volunteers to be in the lab for data collection, questionnaires, blood samples etc. Our volunteers are expected to do all their research commitments each day before heading out to La Paz/Base camp to explore all it has to offer (e.g. exploring the markets, taking the gondolas to El Alto, trying local delicacies, Cholita wrestling (google it!)). These research commitments won't take long and will depend entirely on the specific research project requirements.

Medical checks = Whilst in La Paz or up the mountain, our expedition doctors may want to check in with volunteers to see how they're doing and you can always reach out to any of the doctors yourself or the committee if you’re struggling with anything and would like any support. Each of the committee will be mental health trained and available for chats at any time, anywhere and anything you say will be entirely confidential and only spoken about with the doctors with your permission or if we deem it necessary.

Buddy system = Like previous APEX expeditions, we are implementing a buddy system where each volunteer will be paired up with another. The aim of this is for volunteers to check in with each other at various times throughout the day, see how they’re doing and help with that added layer of safety about picking up signs and symptoms of AMS.

Sponsorship/Media = Throughout the expedition we may ask for some of the volunteers' assistance with our sponsorship/media tasks such as fun photoshoots
with our brands, as well as blog posts to keep all of our sponsors (and families!) back in Edinburgh happy!

**Post-Expedition**

Post-Expedition Testing and Samples = Once we’re all back in Edinburgh, we will require most volunteers to come back to QMRI (tbc) for some follow up tests and samples to be used for data analysis. The dates for these are tbc and will work around volunteers onward travel plans as well as times when they’ll be in Edinburgh.

Reunion events = It is important to keep in touch with each and everyone that we were on the expedition with, and to help do this we will be organising various reunion events. This is a wonderful chance to get together, reminisce about the trip and some of your highlights (and low points!) of the expedition and further travels. APEX 6 had various socials after we got back from the expedition, from pub quizzes to black tie christmas dinners and these were lovely ways to all meet up again and catch up on any exciting developments!

**Expedition Costs**

There are of course costs associated with coming on an expedition like this, but our funding, grants and sponsorship (FGS) team are working tirelessly to reduce these costs as much as they possibly can to allow APEX 7 to be as accessible as it can be. We will have subsidised places for widening access applicants to help promote accessibility in every aspect of what APEX 7 does.

**Flights**

~£800 return

Flights are the single biggest cost for coming on APEX7. Costs for flights can vary depending on how far in advance you book or which country you come back from (on APEX 6 some volunteers flew back from places like Peru, Chile, Argentina etc). For APEX 7 we are booking volunteer flights in bulk, with more information to
come. Our FGS team are also working tirelessly to apply for grants to help reduce these costs for our volunteers as much as we possibly can.

**Expedition Contribution**  
~£400 (tbc)

We will be asking volunteers to pay a small contribution towards expedition costs. This money will go to covering things such as transport, accommodation in La Paz and Huayna Potosi as well as all our food up the mountain. These costs will be subsidised by APEX 7 as much as we can, and sponsorships and grants will help contribute to doing this.

**Insurance**  
~£50 to ~£100  
(depending on onward travel)

Volunteers will require travel insurance for the duration of the expedition. These costs can vary massively depending on your post expedition travels (for volunteers who plan to travel >6000m after the expedition, this will be associated with a sharp increase in insurance costs). The APEX 7 team will be on the lookout for the best travel insurance for volunteers to purchase, and the team will communicate with volunteers about these when they arise.

**Vaccinations**

**Essential ones free on NHS**
**Extra ones variable depending on post-expedition plans**

Most of the vaccinations required to come on APEX 7 will be free on the NHS, you may however wish to pay for extra ones depending on your plans for post-expedition travel. For example, you may wish to pay for Rabies jabs (~£80) or Yellow Fever (~£65).

**Additional Costs**

Kit, Merch, Spending money, Onward travel
Volunteers will need warm clothes and sleeping bags, it can get down to around -10 degrees celsius overnight! We will be offering subsidised warm clothing, including APEX 7 expedition jackets! Volunteers will also need spending money for their time in La Paz, as well as for any post-expedition travels.

We appreciate that coming on an expedition like APEX 7 does have financial implications to all volunteers, but rest assured we do not expect volunteers to fund the entire expedition out of pocket. The FGS team are constantly looking for grants that volunteers can apply to themselves to help reduce costs, and they are working to secure funding to provide subsidised places for Widening Participation students. There are many grants available to volunteers such as the UofE GoAbroad fund, which attracts a total of £500 for volunteers, and £850 for Widening Participation students, and RMS travel and study grants. The APEX 7 team will be providing volunteers with a comprehensive guide of vetted grants, to help you secure as much funding as possible for the trip.

APEX 7 Application Process

The application process for APEX 7 will be done in 2 phases, similar to past expeditions. Phase 1 will involve an online google forms application, filled out in your own time. This form will be used to assess volunteers' motivation to come on the expedition, motivation for medical research, motivation for travel and culture etc. Phase 2 of the application process will be done through inviting people to interviews, most of these will be conducted in person (location tbc). The interviews are designed to be informal chats to see what volunteers are like, find out their interests and motivations, and find out how they will fit in with the expedition team.

The application window will be opening as follows (exact dates tbc):

- **Online form**: October 2024
- **Interviews**: November 2024
- **Outcomes**: December 2024
Final Comments

This information summary document is designed to be used to help prospective volunteers for the APEX 7 expedition to Bolivia in June/July 2025. Please note that all the information in this booklet is subject to change. If there are any further questions, feel free to contact the team at apex7@altitude.org or visit our website Here (altitude.org)

We hope to see you up the mountain!

David Geddes, APEX 7 Expedition Leader
Cameron Norton, APEX 7 Expedition Leader

Meet the APEX 7 Organising Committee

From left to right = Cameron Norton - Expedition Leader, David Geddes - Expedition Leader, Anya Tan - Head of Research, Colette Revadillo - Head of Communication and Events

From left to right = Ben Harrison - Head of Funding, Grants and Sponsorship, Camille Maezelle - Head of Funding, Grants and Sponsorship, Ella Andrea - Head of Volunteers and Wellbeing, Ella McElnea - Head of Volunteers and Wellbeing