

Dear Everest North Side Rapid Ascent Team Member,

At Alpenglow Expeditions, pre-acclimatization in a hypoxic tent is a key component to staying healthy and being successful on high altitude peaks during our Rapid Ascent programs. We are pleased to have an ongoing partnership with Hypoxico Altitude Training Systems, which allows us to transition from the comforts of our own homes to the altitudes of the mountains that we climb.

Hypoxico systems benefit our teams immensely, allowing us to shorten and bypass certain portions of traditional itineraries, which can be detrimental to one's health and ability to succeed on a long expedition.

Included in the price of your Everest trip is an eight-week rental for Hypoxico's sleeping system and a mask-based exercise system. At the end of this period, you will keep your mask-based exercise system and if you determine that you'd like to keep the tent for future use, you will receive a credit toward the purchase price.

Your tent will be delivered to your home about eight weeks prior to your trip. On your day of departure, you will pack it back into the box in which it came. Leave it by your door for UPS to pick up or bring it to a UPS store. It's all very simple and will make your expedition infinitely more enjoyable!

Your box should come with the following:

- Everest Summit II generator and tent
- Universal mask circuit
- All purpose mask
- Handi oxygen monitor
- Pulse oximeter
- High altitude adapter

At this point, you need to decide which tent you would like to use. There are two options:

- 1) [The "Head Tent"](#)
- 2) [The "Bed Tent"](#)

Please take a moment and click on the links to learn about the two options. Once you have made your decision, please indicate on the questionnaire in your client portal.

Alpenglow's expedition doctor, Monica Piris, will work with you on a plan to get the most out of the your Hypoxico systems, while any technical questions about the tent should be directed to Brian Oestrike of Hypoxico (boestrike@hypoxico.com).

Letter from Dr. Monica Piris

The following is a letter from Dr. Piris. Please read through the rest of this page carefully, and utilize the scoring system and chart that follow:

Dear Rapid Ascent climber,

As part of your preparation, it helps me if you take a little time every day to annotate some of the values you will be monitoring during your use of the tent. I'm a bit of a geek, so I like to collect data, but also, it helps me to build a picture of how you acclimatize, identifying the altitudes at which your body struggles a little more, and those at which you feel great. These variables are different for everyone, so it's important for me to get to know each of you. What I need are the following numbers:

- 1) Night number:** (ie, night number 1 is the first night you sleep in the tent)
- 2) Altitude:** the "altitude" which the generator setting is simulating.
- 3) Heart rate (evening):** 5 minutes after getting into the tent and being at rest
- 4) Oxygen saturations (evening):** 5 minutes after getting into the tent and being at rest
- 5) Heart rate and Ox saturation first thing in the morning:** before getting out of the tent.
- 6) AMS score:** a measure of symptoms of Acute Mountain Sickness as per the Lake Louise scoring system.

On page 5 of this letter there is a chart that you can print and leave by your tent to fill in, but in this day and age you may prefer to annotate electronically on your smart-phone or computer on a spreadsheet...or however you wish.

Your morning readings are much more relevant than the evening readings, but for the evening readings I suggest you take it once you have been settled in the tent for about 10 minutes then read the pulse-ox and write down the results. Also included is a sheet with basic AMS scoring for your reference.

I am available via email for all questions, concerns and problems (if they occur) that you have during your preparation for the trip. A huge factor in being successful is identifying potential hiccups early on and dealing with them at home so that you are fit and healthy when it's time to climb.

Best wishes, good luck with the training, and please don't hesitate to email me!

-Monica
monica@alpenglowexpeditions.com

Suggested Hypoxic Tent Use for Everest

Please note that this schedule is for use by people who live at sea level only. If you live above sea level, please email monica@alpenglowexpeditions.com for an altered ascent schedule.

Night Number	Setting	Altitude (ft)
1-2	5	5,000
3-4	6	6,070
5-7	7	7,370
8-9	7.5	8,370
10-11	8	9,060
12-14	8.5	10,120
15-17	9.5	11,600
18-21	10	12,360
22-25	12	13,000

The schedule for the first few days is fairly slow, this is so that you can get used to sleeping in the tent before it gets too “high”. It is important to try and maintain your quality of sleep throughout this process. If you do an intense workout, or get sick, please feel free to spend a night or two at a lower altitude or out of the tent completely. It is important that your body has time to recover at night.

Beyond setting 12 we need to use the High Altitude Adaptor to gently increase the sleeping altitude. As it is not possible to calibrate the high altitude adaptor, you **must use the oxygen monitor** that Hypoxico provides. See below for relevant instructions for use of the adaptor from the Hypoxico manual.

The only guide you have to help you figure out what approximate altitude you will be sleeping at is the Oxygen Monitor, that’s why it is ESSENTIAL you use it. Once you have calibrated it as per the instructions, we recommend trying the following schedule for the remaining nights before you leave for the Himalaya:

Night Number	Reading % on Ox Monitor	Approx. Altitude (ft)
26-30	12.5%	13,540
31-35	12%	14,350
36-40	11.5%	15,620
41-45	11%	16,490
46-60	10.5%	17,840

You must only proceed if you feel well at each altitude, and your morning oxygen saturations should never drop below about 80%. Feel free to email us if you have any doubts about how you are feeling or how your sleep quality is at these “altitudes”.

The increase in the number of nights spent at each new sleeping “altitude” is important as you go higher. Even if you feel well before you are due to increase the altitude, you should not be tempted to rush. It will be better for your acclimatization to take your time.

Over the final couple of weeks there is little benefit in going below 10.5%. Multiple nights at this altitude are likely to make you stronger than trying to push any higher. To have good quality rest at this altitude during your last two weeks in your own bed, will render you better prepared to begin the expedition in good health than if you continue to reduce your sleeping oxygen levels up until you leave. It is, however, important to use the tent until the last day before your departure.

The last two pages of this document are a sheet for you to fill in with your oxygen saturation, heart rate and AMS score readings. Please do this daily and email them to Monica at the end of each week. The morning readings (taken when you wake up but before you open the tent) are much more relevant than the evening ones, but for evening one I suggest that once you have been settled in the tent for about 10 minutes, you read the pulse-ox and note down the results. There is also a sheet with basic AMS scoring for your reference.

Adjustment of the High Altitude Adapter

When using the high altitude adapter, the flow of the generator should be set to high, as you are attempting to simulate altitudes higher than the capability of the generator itself. The altitude that results from the use of the adapter can be controlled with the valve on the upper arm. Unfortunately, it is not possible to accurately predict the altitude that results from a given setting of the valve and flow meter. For this reason, the adapter should only be used in conjunction with an Oxygen Monitor.

The use of the valve can be understood as follows:

When the black lever of the valve is in line with adapter hose, the valve is fully open. This allows for the highest possible simulated altitude and provides the lowest hypoxic flow rate.

When the black lever of the valve is perpendicular to adapter hose, the valve is closed. The simulated altitude as well as hypoxic flow rate are identical to the highest generator setting in the complete absence of the adapter.

When the black lever is in a position somewhere between perpendicular and in-line, the valve is partially open. Positions between fully opened and closed allow for variable simulated altitudes that are higher than max of generator alone.

Again, always feel free to email us if you have any doubts about how you are feeling or how your sleep quality is while using the Hypoxico system.

Lake Louise AMS Scoring System

Use these score totals in your daily acclimatization stats worksheet			
Symptom	Score	Symptom	Score
Headache		Dizzy/Light-Headedness	
No headache	0	Not dizzy	0
Mild headache	1	Mild dizziness	1
Moderate headache	2	Moderate dizziness	2
Severe headache	3	Severe, incapacitating dizziness	3
Gastrointestinal Symptoms		Difficulty Sleeping	
No gastrointestinal symptoms	0	Slept well as usual	0
Poor appetite or nausea	1	Did not sleep as well as usual	1
Moderate nausea or vomiting	2	Woke many times, poor sleep	2
Severe nausea and severe vomiting	3	Could not sleep at all	3
Fatigue/Weakness			
Not tired or weak	0		
Mild fatigue/weakness	1		
Moderate fatigue/weakness	2		
Severe fatigue/weakness – incapacitating	3		

