Mountain Air Cardio

THE ULTIMATE GUIDE TO ALTITUDE TENTS

For Cardio Improvement or Weight Loss

Altitude tents were once a fringe accessory used mainly by the highest tier of elite athletes to improve cardio performance. Not anymore. Today, altitude tents (also called elevation tents or hypoxic tents) are used by mountaineers looking to pre-acclimatize before a high-altitude trek, by weekend warriors wanting to keep up with their buddies, and by the guy-next-door who just wants to lose a few pounds and feel great during the day. If you're considering giving an altitude tent a try, here are some things to keep in mind when selecting a system that's right for you.

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WHICH TYPE OF SYSTEM IS BEST FOR YOU?

There are basically two types of systems – the full-bed tent and the head-and-shoulder mini tent style. Both have pros and cons.

The full-bed elevation tent is a tent that fits around the entire mattress. The benefits of this style are a more comfortable, better quality sleep, a quieter environment, and very stable altitude levels inside the tent. The downside of this style is a higher cost.

Head-and-shoulder mini elevation tents are smaller, quicker to set up, and use a smaller hypoxic air generator so cost less. The downsides are that they use a weighted chain to create a partial seal which lays across your chest while you sleep. Movement during your sleep causes a gap that allows air to leak out, which results in the simulated altitude to drop by thousands of feet. Once the elevation drops, you'll no longer trigger the physiological responses to altitude. They also run louder so most users need to wear earplugs when they sleep.

Mountain Air Cardio no longer sells the head-and-shoulder mini tents for the reasons mentioned above, but we are happy to answer any questions you have.

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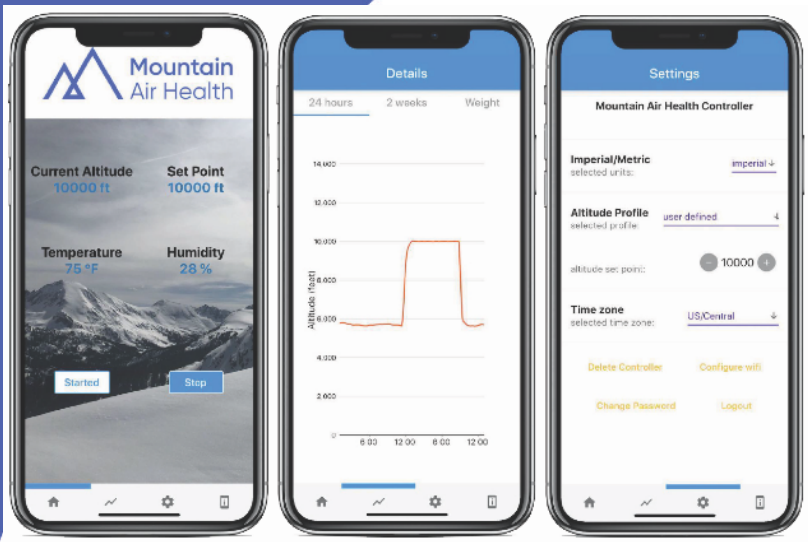

MANUALLY CONTROLLED OR AUTOMATICALLY CONTROLLED?

In the 'old days' (pre-2020), all elevation tents were manually controlled. With those models, it would take about 1-½ hours, and a fair amount of hands-on tweaking for the oxygen levels inside the tent to stabilize. The user manually measures the oxygen percentage with a hand-held meter and compares the measured O2% against an altitude chart to determine the simulated elevation. If the stabilized elevation was too high, you'd decrease the flow rate from the air unit and repeat the process (and vice-versa if the elevation was too low). It was cumbersome and time-consuming, especially during the 1-2 week acclimatization phase when you're at a different altitude each night.
With an automated system, there is no oxygen meter, no charts, no tweaking. You just set it and forget it.

The controller and companion app continually measure the O2% inside the elevation tent and also monitor barometric pressure, temperature, and humidity. When the system starts to approach the altitude setpoint, a fresh air ventilation fan that is integral with the tent kicks in. The fresh air dilutes the hypoxic air until the altitude setpoint is achieved. We are able to dial-in altitude to within +/- 10 feet using this type of control. Data is logged over a 14-day period and presented in graphical format.

A nice "side-effect" of using this type of altitude control is that you're always getting fresh air into the tent. Older designs have a significant temperature, humidity, and CO2 spike because they are sealed off from the room air. An automated system helps keep these environmental parameters more comfortable which results in better sleep quality.

We highly recommend the fully automated version for the reasons mentioned above, but we also offer the legacy manually controlled version for those on a tight budget.

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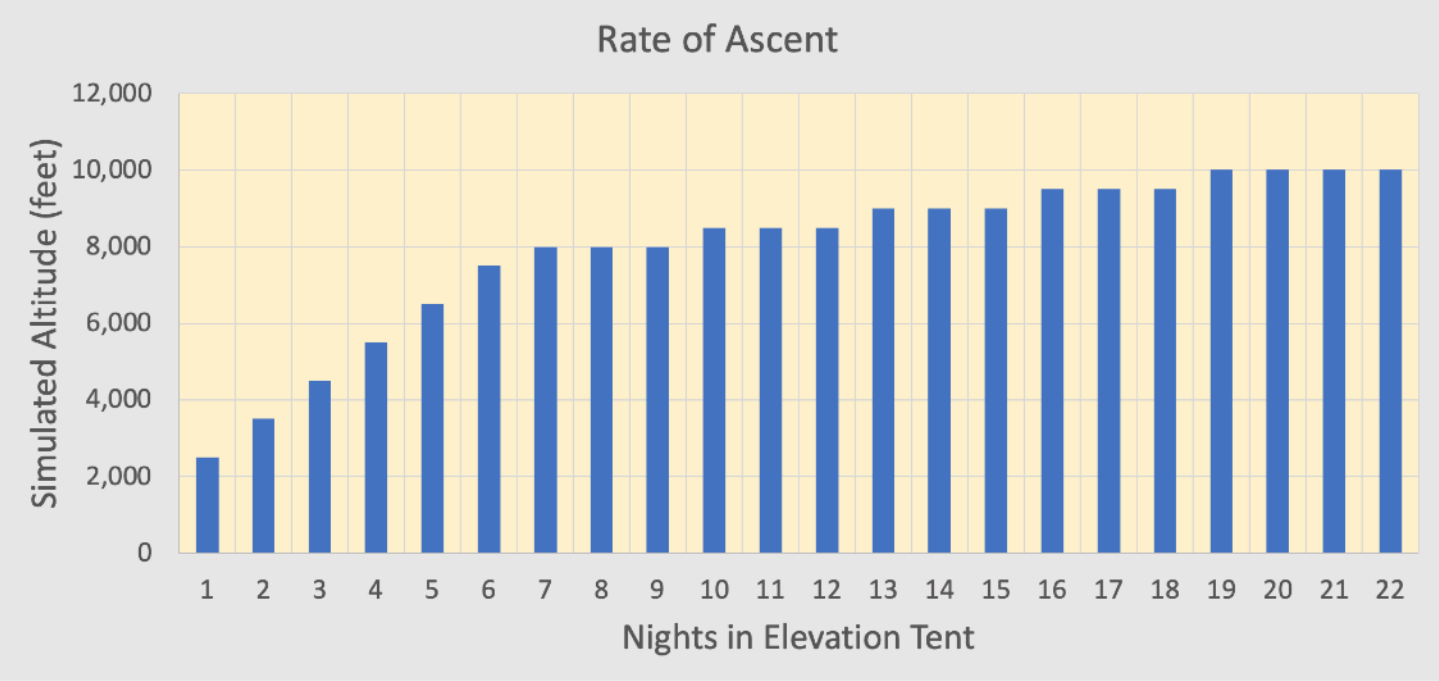

HOW HIGH SHOULD MY ELEVATION TENT GO?

The short answer is 7,500 to 10,000 feet. This is considered the "sweet spot" of altitude training. Elevations less than 7,500 do not fully trigger the physiological responses to altitude. At elevations higher than 10,000 feet, sleep quality begins to suffer and there are no more noticeable gains to cardio improvement. Even for those training for a mountain expedition of 19k' or more, sleeping at 10,000 feet helps to avoid the symptoms of acute mountain sickness and provides all the cardio benefits needed to achieve those higher altitudes for short periods of time. That said, for those who would like to sleep at higher elevations (up to 12k'), please select the high altitude option at checkout.

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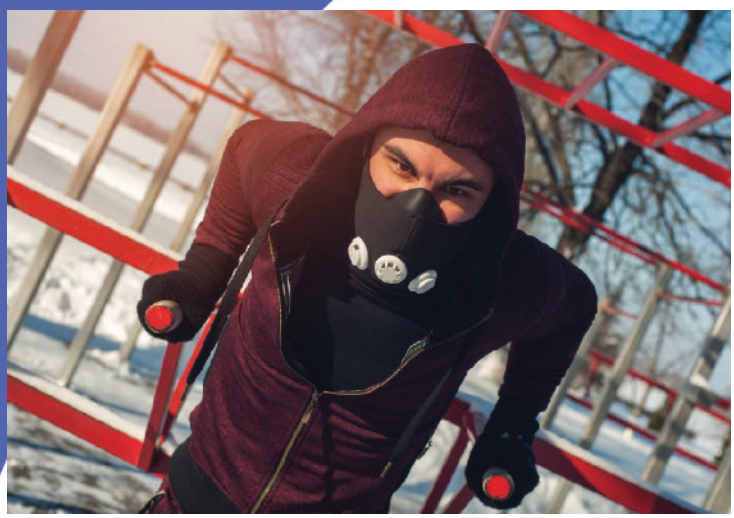

WHAT ABOUT ALTITUDE TRAINING MASKS?

There are two types of training masks. The first one is just a restrictive breathing mask. This type of mask does not create a hypoxic environment and does not trigger any of the benefits of being at altitude. There are some studies that show it may increase the strength of the diaphragm, but it has no effect on hemoglobin mass or red blood cell count.

The second type is a hypoxic training mask that is connected to an air unit and is used while on a stationary bike or treadmill for "intermittent hypoxic training" (IHT).

A hypoxic training mask is more effective than a restrictive breathing mask, but keep in mind that hypoxia is dosage-dependent. The two factors for hypoxic training dosage are: How high? How long? A hypoxic mask can achieve the "how high" but not the "how long". You don't wear one for very long. Even if you had an extended workout of 90 minutes, that isn't enough time to trigger the full benefits of altitude. The real benefit of hypoxic exposure comes over time which is why the best results are achieved when you sleep at altitude and achieve 6-8 hours of exposure at once.

Also, if you're exercising in a hypoxic state, you're unable to deliver the full amount of oxygen to your muscles, so they can't be worked as hard as they would be at your ambient elevation. That's why the modern hypoxic training mantra is, "live high, train low" (LHTL), or in this case, sleep high, train low.

Some studies and user case studies show benefits in combining LHTL with IHT. That is why our altitude systems are compatible with our hypoxic training mask for use in IHT. The training mask is also an easy way to extend your time at altitude without having to be in a tent. Many athletes use their training masks while watching TV or working at a desk.

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NOISE LEVELS

All hypoxic air units run somewhat loud at around 65-70 dBA @ 1m. This is about the same noise level as a window-mounted air conditioner and is similar amongst all brands. There are two sources of noise to consider:

1. The noise level of the air unit – The noise coming directly from the air unit can be mitigated by keeping it in an adjacent room or hallway – just make sure that you're provided with enough air hose to be able to do that. Our systems come standard with 25 feet of hose, but we can provide more if we know how much you need for the layout of your home.

2. The noise that comes through the air hose into the tent – It's all well and good to place the air unit in an adjacent room but its noise is still carried through the hose straight into the tent. You could use earplugs, but a much more elegant solution is a "silencer". This is a device that attaches to the end of the air hose and is placed inside the tent. All of our systems ship standard with an air hose silencer that reduces the noise down to 45 dBA which is just barely audible.

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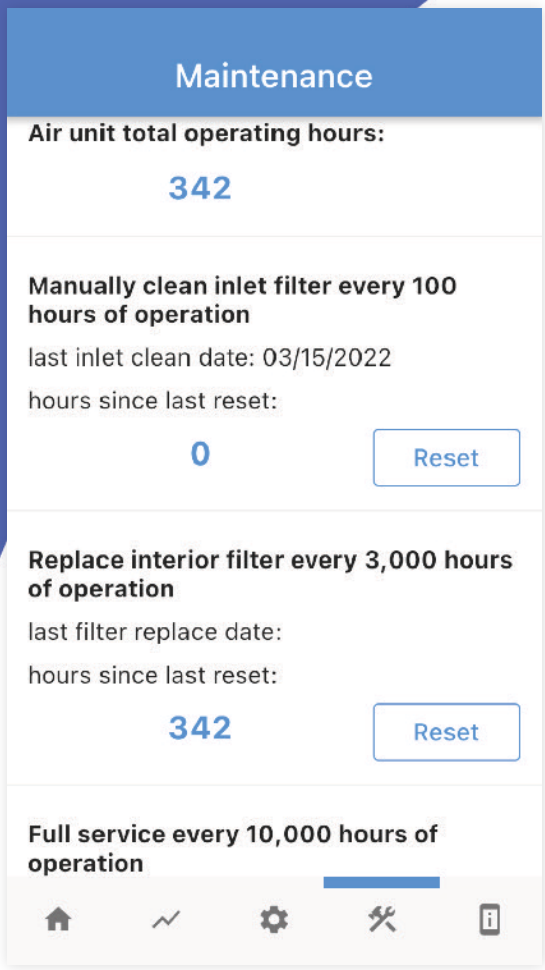

MAINTENANCE REMINDERS

Elevation tents don't require much maintenance but it's important that the filters in the air unit are looked after regularly. There is an inlet filter that can be manually cleaned under running water twice per month. There's also a small filter that is changed after a year of operation or roughly 3,000 hours based on average usage of 8 hours per day. There is no major maintenance required until 10,000 hours of service (3-4 years of using the system each night). The app will send you an automated email when it's time for maintenance along with instructions on what to do.

CUSTOMER SUPPORT

As with any significant purchase, trusting the people who will support you if anything comes up is huge. Before you invest your money, contact the manufacturer to see if they are easy to talk to, responsive, and can answer your questions. Make sure they understand the physiological aspect of the product, because in the end, it's YOUR physiology they're talking about. For info, our support number is 720-432-6305.

This is not just a device that you wear on your wrist – you actually sleep inside this thing. You want to know you can get excellent and timely technical support when it's needed.

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FEATURE COMPARISON

	Mountain Air®	Company A	Company B
Full Bed Tent	✓	✓	✗
Head-and-Shoulders Mini Tent	✗	✗	✓
Monitor Altitude Remotely	✓	✗	✗
Set Altitude via Companion App	✓	✗	✗
Automated Ascent/Acclimatization	✓	✗	✗
Continuous Ventilation	✓	✗	✗
Near-Silent Operation	✓	✗	✗
Maintenance Reminders by E-mail	✓	✗	✗

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