A few choose to climb world's tallest mountain without bottled oxygen

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In this May 2013 photo, tents are pitched on Camp 2 as climbers rest on their way to the summit of 29,035-foot-tall Mount Everest. May is the most popular month for Everest climbs because of more favorable weather. AP Photo/ Pasang Geljen Sherpa

Take a step, stop, breathe in 15 times, breathe out 15 times, take another step and stop. This is how one of the world's most accomplished mountaineers describes approaching the summit of Mount Everest without the benefit of bottled oxygen.

"I'd be literally having to force myself after that 15th breath to take the next step," said Ed Viesturs, the only American who has stood atop all 14 of the world's 8,000-meter peaks. He scaled them all without using extra oxygen. In the thin air, he said, one wrong movement and "all of a sudden you lay there for 10 minutes trying to catch your breath."

Most people who climb Everest begin using bottled oxygen, or just "oxygen" in climbing terms, at around 23,000 feet. Above 26,000 feet, nearly everyone uses it. Only 3 percent of the climbers who make it to the top of Everest don't use oxygen, according to Richard Salisbury of the Himalayan Database. These climbers make up almost a quarter of deaths taking place above 26,000 feet on Everest.

Until this month, no one had been on top of Everest for two years. A catastrophic earthquake in Nepal triggered an avalanche that killed 24 climbers on the mountain last year.

Most Climbers Need To Use Extra Oxygen

This month, several hundred climbers reached the top of Everest, at least four died, and more are still climbing. Very few will reach the peak without oxygen.

Among those trying are two U.S. climbers, veteran expedition guide Adrian Ballinger of Squaw Valley, California, and National Geographic photographer Cory Richards of Boulder, Colorado.

In the thin atmosphere on Everest's peak, 29,035 feet up, each breath pulls in less than a third of the oxygen of a breath at sea level.

Many science and medical professionals assumed climbing without oxygen was suicidal until 1978, when Reinhold Messner and Peter Habeler did it. Messner later wrote that he felt like "nothing more than a single narrow gasping lung, floating over the mists and summits" during his desperate crawl to the top.

A Mexican climber reached the top of Everest without oxygen on May 12. Before that, the most recent summit without oxygen, and the most recent death without it, occurred four days apart in May 2013.

"Even if you're on oxygen at extreme altitude, you can't get nearly enough oxygen to feel good or be completely safe," said Peter Hackett, founder of the Institute for Altitude Medicine in Telluride, Colorado. "Without oxygen, your body is slowly dying."

Lack Of Oxygen Results In Chain Reaction Of Negative Effects

The lack of oxygen, called hypoxia, causes a chain reaction of physical effects, Hackett said. Breathing rate increases as the body tries to pull in more oxygen, physical tasks become harder because muscles require oxygen and breathing starts to take extra effort.

Appetite is diminished and food isn't absorbed efficiently. Not getting enough food makes climbers ever more tired. They become too exhausted to melt snow for water and become dehydrated.

Blood thickens as the body produces more oxygen-carrying red cells. Frostbite is more likely as the body pushes oxygen-rich blood toward its core and away from its limbs. Sleeping is difficult because less oxygen reaches the sleep centers of the brain. Lack of sleep and lack of oxygen combine to impair thinking and cloud judgment.

People may hallucinate, take risks they shouldn't or become too tired. They might sit down and never get up.

Many climbers get sick, starting with a headache and nausea. It can progress to poor body control, confusion, swelling in the brain, fluid in the lungs, coma and death. Some climbers who appear fine discover later they've suffered permanent brain damage.

So Why Try? For The Challenge

Given these risks, why would anyone want to try to go up Everest without oxygen?

"If I'm going to go to a mountain that's 29,000 feet high like Everest, I want to climb that 29,000-foot mountain," said Viesturs, 56. He last climbed Everest in 2009. "In respect for the mountain, I try to climb it under its terms. ... It's not as intriguing if I bring the mountain down."

In terms of the how it affects the body, bringing the mountain down is exactly what extra oxygen does. Some hardcore climbers consider it cheating.

Biophysicist Thomas F. Hornbein climbed Everest in 1963. He calculated that the summit feels only half as high to a person resting on top, breathing bottled oxygen at three liters per minute. Even working hard and breathing hard rather than resting, the mountain would still seem a mile lower than it actually is.

"People always say it feels like you're Superman, and you can go faster and you stay warmer," said Viesturs of the feeling of breathing bottled oxygen. For him, though, the oxygen had an unpleasant side effect. Wearing the oxygen mask made him claustrophobic.

U.S. Climbers Are Taking Extra Precautions

Ballinger and Richards insist they are not being overly dangerous. They spent weeks acclimating to the altitude. Ballinger slept in a hypoxic tent to mimic they altitude they are going to face. They are in constant contact with medical professionals through satellite Internet. They have a supply of emergency bottled oxygen stashed at 26,000 feet.

Ballinger has summited Everest six times, all with oxygen. Richards hoped to climb without oxygen in 2012 but became ill and was airlifted off the mountain.

"What scares me is how I will walk that fine line between success and death," Ballinger said before the climb. "I want to try to find that line and stay on the correct side of it."

This may not be up to him, said Hackett. Extreme altitude tolerance may depend more on genetics than fitness or preparation.

"Without oxygen," Viesturs said, "99 percent of the people who have climbed Everest wouldn't have climbed Everest."

Quiz

1 Which of the following paragraphs from the section “Most Climbers Need To Use Extra Oxygen” BEST explains why climbing Mount Everest without oxygen can be so deadly?

2 According to the article, lack of oxygen “causes a chain reaction of physical effects.” Which paragraph from the article BEST supports this idea?

(A) "I'd be literally having to force myself after that 15th breath to take the next step," said Ed Viesturs, the only American who has stood atop all 14 of the world's 8,000-meter peaks. He scaled them all without using extra oxygen. In the thin air, he said, one wrong movement and "all of a sudden you lay there for 10 minutes trying to catch your breath."

(B) "Even if you're on oxygen at extreme altitude, you can't get nearly enough oxygen to feel good or be completely safe," said Peter Hackett, founder of the Institute for Altitude Medicine in Telluride, Colorado. "Without oxygen, your body is slowly dying."

(C) Appetite is diminished and food isn't absorbed efficiently. Not getting enough food makes climbers ever more tired. They become too exhausted to melt snow for water and become dehydrated.

(D) Many climbers get sick, starting with a headache and nausea. It can progress to poor body control, confusion, swelling in the brain, fluid in the lungs, coma and death. Some climbers who appear fine discover later they've suffered permanent brain damage.

3 Which of these sentences would be MOST important to include in an objective summary of the article?

(A) "I'd be literally having to force myself after that 15th breath to take the next step," said Ed Viesturs, the only American who has stood atop all 14 of the world's 8,000-meter peaks.

(B) Breathing rate increases as the body tries to pull in more oxygen, physical tasks become harder because muscles require oxygen and breathing starts to take extra effort.

(C) Extreme altitude tolerance may depend more on genetics than fitness or preparation.

(D) "Without oxygen," Viesturs said, "99 percent of the people who have climbed Everest wouldn't have climbed Everest."

4 Which central idea is MOST supported by paragraphs 1-5 of the section “So Why Try? For The Challenge”?

(A) When mountain climbers use oxygen, they feel faster and stay warmer than climbers that go without it.

(B) For mountain climbers using oxygen tanks, the altitude at the summit feels roughly half as high as it really is.

(C) Some climbers feel that using oxygen eliminates many of the challenges that make mountain climbing so rewarding in the first place.

(D) Many climbers cite the discomfort and claustrophobia caused by wearing the masks as reasons why they choose to go without oxygen.