

## Source One Everest by the Numbers

Himalayan Data Base 2017

	NEPAL	CHINA	TOTAL	
Members	2,627	1,706	4,333	52%
Hired	2,653	1,320	3,958	48%
<b>TOTAL Summits</b>	<b>5,280</b>	<b>3,026</b>	<b>8,306</b>	
	64%	36%		
Member Deaths	89	84	173	60%
Hired Deaths	92	23	115	40%
<b>TOTAL Deaths</b>	<b>181</b>	<b>107</b>	<b>288</b>	
	63%	37%		
Death Rate	1.27	1.15		



## Source One: Success

- Big Summit Numbers from Nepal Tourism reported for spring 2017 there were 445 summits from the south (Nepal) side consisting of **190 foreigners**, 32 fee-paying Nepalis, 233 Sherpas. They issued **375 foreign permits** thus a **50% foreigner success rate**.
- First ever, Edmund Hillary and Tensing Norway in 1953
- Japanese mountaineer Yuichiro Miura, 80, reached the 29,035-foot peak Thursday morning, May 2013. The feat marks Miura's third time atop Mount Everest. In 1970, he became the first person to ski down Mount Everest (from the 8,000-meter mark).
- May 22, 2010, at the age of thirteen, American teenager **Jordan Romero** became the youngest person to climb to the **summit** of Mount Everest.
- A 13-year-old Indian tribal schoolgirl who has become the youngest girl to climb Mount Everest has told the BBC in her first interview that she wants to be a role model for tribal children. **Malavath Purna** said she felt "great" on reaching the summit on Sunday. May 28, 2014.
- Melissa Arnot first female American no Os summit to survive.
- Erik Welhiemeyer the only blind person to reach the summit of Mount Everest, on May 25, 2001.
- Gary Guller - the first person with one arm to summit the highest mountain in the world! May, 2003, and again in 2007.
- Greg Paul summited with two artificial knees 2016
- 2016 300 successful summits: 160 climbers and 240 Sherpas reached the summit, – 6 deaths 5 climbers and 1 Sherpa
- Reinhold Messner solo climbed without any oxygen twice. *It was considered scientifically impossible. Messner experienced a sensation of “bursting apart.” He later said that his “mind was fully dead and only his soul was pushing him upward.” With less than 80 vertical meters left to climb, he collapsed every ten feet and literally crawled to the highest point on Earth. “Their ascent not only shook the climbing community but also the medical community, causing doctors to reevaluate what they thought they knew about the human body.”* In 2017 – 19 tried without oxygen – 11 summited – 2 died. 6- turned back.
- Apa Sherpa, made 21 successful attempts between 1990- 2014
- Annapurna (Everest) is the deadliest 8000 meter mountain with a summit to death ratio of 5:1 deaths for every summit (109:55). April 25, 2015, deadliest day with 19 fatalities (deaths).
- Ski mountaineer and ultrarunner Kilian Jornet set a new record for the fastest known alpine ascent of the world's highest peak in the early hours of Monday morning, having climbed 11,429 feet to the top of Everest in a mere 26 hours.
- Indian woman, Anshu Jamsenpa, climbs to the top of Mount Everest twice in five days
- *There is also beauty on Everest. I'll never forget the breathtaking view from our perch at Camp III, clouds roiling up the Western Cwm like a slow-motion reverse avalanche. Or the visceral relief of a cup of scalding soup at Camp IV. Or the crunch of my crampons in the crystalline labyrinth of the Khumbu Icefall just above Base Camp. I'll treasure the memory of climbing with friends on the mountain. I committed my life to them, and they committed their lives to me.* Mark Jenkins, mountaineer and successful summit, 2013.

## Source Two: Equipment

- super strong backpack fabric used for car air bags and sturdy loops to hold everything from the ice ax to goggles
- half dome helmet weighing less than a ½ lb
- heat-reflective boots, weatherproof, lightweight, and double-layered
- crampons stainless steel spikes with front spikes strapped to boots to climb icefalls
- titanium ice ax lightweight, strong, and endures extremes temperatures used to climb and for self-arrest
- body harnesses, permacord rope and carabiners – holds up to 5,000 lbs
- aluminum ladders and small shovels
- eye goggles have lenses that can be swapped out for change in light conditions and snap lights and night vision goggles for night climbing – anti-fog coatings and vents will help keep vision clear
- oxygen tanks contain extra Os six-pound tank - more sophisticated "open systems" that mix with the surrounding air, making the air supply last longer.
- hypoxic tent used in climbers' homes to build red blood cells without climbing
- balaclava, thermal gloves
- Gore-Tex that are also waterproof and can protect against cold and wind (helps protect to -100°).
- Polypropylene underwear — today's sophisticated long-johns  
*“Gore Windstopper shell fabric, airy 800-fill goose down, an internal down collar, an articulating "snorkel hood," and a dozen other features make The North Face's Himalayan Suit a common outfit on the world's tallest peaks. The suit provides warmth and protection, though it's designed for active climbing with cuts that do not inhibit movement going up past the clouds.”*
- glacial cream , a barrier **cream**, esp against ultraviolet radiation, used when climbing above the snow line
- cell phones text from the summit; computer pads to journal and check everything from wind speed to world news
- medical and weather monitors and other sophisticated technologies are used by expedition companies

## Source Three: Sherpas

- Nepalese ethnic group numbering around 150,000. They are renowned for their climbing skills and superior strength and endurance at high altitudes.
- Indigenous(native) people natural blood oxygen goes up to 23,000 feet ~ easier for them to climb to higher altitudes
- The word 'Sherpa' is commonly used to describe someone who is a mountain guide or porter working in the Everest area.
- strong, kind, cautious – take responsibility for the climber's safety
- experienced guides, routine climbs for them – sometimes without oxygen – climbed ice falls 15-20 times in a season
- blaze trails and fix ropes) into the icefalls and slopes, set up ladders for crevasse crossovers (Yellow Brick road – South Col – Khumba Icefall)
- carry climbing equipment and/or oxygen tanks
- make camp, often cook and heat liquids for climbers
- porters and yaks help carry gear up to ABC
- Sherpa porter carries some equipment, help cook meals.
- Sherpas die young in accidents ~ ~ -blood-thickening effects of altitude, blood clots and strokes
- Higher altitudes = best Sherpas
- Over 40% of deaths are Sherpas
- The Nepal Ministry of Tourism requires every climber to hire a Sherpa guide.
- *British mountaineer Kenton Cool, who's climbed Everest 11 times, explains: "The Sherpas are so important. For one, they're the local people, so they know the culture, they know the area, they know the people. "But when it actually comes to climbing the mountain they have this phenomenal energy and power on the mountain. "So pretty much any western climber that may go to Everest will use Sherpas to help get the logistics in place, all the ropes, all the tents and things like that. "They really are the backbone of any expedition."*
- *provide comfort to climbers who are having a hard time. "Although very few of them actually speak English, language does not seem to be a barrier when it comes to looking after the climbers. As well as comfort, they can also offer a boost in morale to those who are finding it difficult to want to carry on with the expedition. It can often be hard to get this boost from other climbers, but Sherpa's are experienced and have made the climb many times before, so they are going to find it a lot easier than the average climber."* Colin Wallace, Everest Writer

## Source Four: Safety and Rescue

- pulse-oximeter test – measures the amount of oxygen in red blood cells
- self-arrest climber who has fallen and is sliding down a snow or ice covered slope stops or slows the slide by themselves using an ice ax and crampons
- Emergency room on Base Camp and ABC is state of the art for both climbers and Sherpas
- Water is life-saving – dehydration leads to most illnesses and deaths
- Up-to-the-minute weather forecasts, daily blood tests to test oxygenation, constant communication
- Gamow Bag is enclosed around climber and pumps in oxygen when HACE or HAPE symptoms begin. Used to bring climber down the mountain.
- 2005 helicopter lands on Everest Base Camp
- 2015 Helicopters: only on Nepalese side, fly up to 20,000 feet, Camp Two safely for rescue. Small, high-performance Air Bus helicopters were being used to ferry climbers and guides from Camp One to Base Camp
- Avalung – keeps avalanche victims alive and transceivers show the position of the climber
- Greatest lifesaver – duct tape
- Whistles and flashlight signals for help
- New medicines: acetazolamide can prevent altitude sickness and nifedipine treats the symptoms

### Source Five: Other TO GO facts

- Personal challenge and discipline to climb over 29,000 feet; literally
- Top of the World
- Fame and fortune – talk show circuit, book deals, videos, other climbing adventures
- birch, juniper, blue pines, firs, bamboo and rhododendron grow below 18,690 feet
- below 12,000 feet: musk deer, wild yak, red panda, snow leopard and Himalayan black bears and deer, langur monkeys, hares, mountain foxes, martens, and Himalayan wolves at lower altitudes.
- cultural fellowship with Sherpas
- View the curve of the Earth
- eat 6000 calories a day (lose 20% of body weight) – gourmet food, snickers popular
- snowboard, ski, parasail down from certain heights
- Communication: Virtually every climbing expedition these days has hand-held and often solar-charged radios to communicate with base camp as much as 12,000 feet below. A new Internet café even lets climbers send email and surf the Web at 17,000 feet.

## Source Six: Illnesses

- dehydration - use or lose more fluid than take in, body doesn't have enough water/fluids for normal functions – leads to headaches and other serious conditions, see below.
- flu – In 2017 more than half of climbers suffered from extreme flu
- frostbite – lose toes, fingers, nose, ears – no blood movement – tissue decays – three levels: frost nip, superficial, deep  
“One of the tragic stories from Everest 2017 was of Dawa Sange Sherpa who had all of his fingers severely frostbitten while working with a client who reportedly refused to turn back in bad weather.”
- hypothermia – blood freezes – lowest recorded case 55.4°F – body temperature should be 98.6°F
- wind and sunburn peels layers of skin – infection is common
- snow blindness – sun burns retinas – can be permanent – most recover sight
- Acute Mountain Sickness (AMS) cause: high altitude (too fast or just too high) happens to most climbers sometime in the climb  
symptoms: loss of appetite, nausea, vomiting, fatigue, weakness, dizziness, difficulty sleeping
  - ❖ H.A.C.E. – High **altitude** cerebral edema – brain fills with fluid/blood disorientation – brain swells – coma – death
  - ❖ H.A.P.E. – High **altitude** pulmonary edema – lungs fill with fluid/blood – disorientation – constant coughing- coma – death ~
- Khumba cough - extreme irritation - **dry**, persistent cough which can restrict breathing – cough up throat and lung tissue
- hypoxia – lack of oxygen to brain – shallow breathing – dizziness – can lead to psychosis – oxygen tanks can fail
- psychosis – confusion, loss of memory - affects decision making



### Source Seven: Weather – April and May

- wind speeds up to 250 mph jet streams but in April/May – winds calm and temperatures warm up creating “weather window”
- summit attempts ~ wind under 35mph
- winds have narrow currents ~ storms contain wind, sand, rock, ice – can destroy tents
- wind chills ~125°
- ~100°F to 100°F temperatures
- average temperature is ~36°
- seven hours of sunshine a day
- daytime temperature 41°F nighttime 19°F
- highest summit temperature ~2°F never above freezing
- summit precipitation ~ very little snow ~ above the usual condensation/perceptible elevation

## Source Eight: Death Zone

- over 200 - corpses on path up to summit used as markers
- nicknamed Rainbow Valley - colorful snowsuits of deceased climbers
- not enough oxygen to breathe
- oxygen tanks can freeze
- breathing can cause exhaustion
- brain cells begin to die – body begins to die – cannot acclimate without oxygen
- “Death Zone is like being slowly choked while doing the hardest physical thing possible.”
- unpredictable weather the higher up
- icy winds 140 mph -250 mph
- good day – temps are -15°F
- camp 4 to summit - 3000 feet before summit – 23,000 ft to 26,000 ft
- higher risk of H.A.P.E. etc the longer in Death Zone
- 1/3 have to turn back within feet of the summit
- top of summit is the stratosphere
- chances of rescue - slim to none
- terrain is triangular
- 12 hrs to summit from North Col
- food is counterproductive - cannot eat enough to burn calories

## Source Nine: Physical Dangers

- Khumba Icefall – vertical ice wall on South side (Nepal) - between 20 and 30 crevasses.
- Deep crevasses – separation of glaciers causes deep cracks in the earth – *“The ladders are not always straight across a crevasse, in fact almost never. They can go down, straight up, be positioned at an angle, anything but horizontal. There can be dual ladders in high traffic areas. Sometimes an up ladder and a down ladder.” Alan Arnette, high altitude mountaineer, summited Everest in 2011, expedition reporter*
- Hillary Steppe – vertical ice wall just before summit
- avalanches:
  - 1/3 of all deaths are from avalanches
  - Caused by warm weather and/or winds
  - Mostly at night
  - As many as 20 a day
- ice blocks of up to 40 tons each
- glacial rivers – movement of snow and ice – can be fast-moving
- seracs – towers of ice – easily toppled

## Source Ten: Other Don't Go Facts

- three months to summit
- up and down and up and down to acclimate
- time - sitting, lying down, resting, breathing
- slow motion abilities – disoriented frequently
- few to no showers
- Base Camp and other camps filled with trash
- narrow paths – overcrowding - - leads to “traffic jams” and deaths
  - “...there are too many people on Everest who lack the basic mountaineering skills to survive a major weather event or their own misstep when it will undoubtedly occur.*
- Now, with so many climbers, some Sherpas are inexperienced
  - There are too many “Sherpa Guides” who simply don’t have the experience or skills to be of aid to those inexperienced climbers when the inevitable occurs.” Alan Arnette – high altitude mountaineer, summited Everest in 2011, expedition reporter*
- *"You know what Ed [Hillary] had going for him? Not his ice ax or his crampons. He had drive and ability and his eyes set on the world's highest peak," he says. "You can give all this gear to a total novice (inexperienced climber), and there's no guarantee that they're going to climb 100 feet higher." David Breashears, who co-directed the acclaimed Imax film on the mountain during the deadly 1996 season.*