

## Tibetans' genetic mutations help them survive at extreme altitude

When you hear the word “mutation,” you may think of something destructive, or of Marvel’s X-Men. But some mutations—which are just differences in DNA—can be historic.

Take, for example, a genetic sequence found in the vast majority of people from Tibet.

Millions of Tibetans spend their days at average elevations of nearly 15,000 feet—that’s more than half the height of Mount Everest. Up there, the air is thin—with 40 percent less oxygen than at sea level. That lack of oxygen would leave most Westerners struggling for breath, but Tibetans seem to breathe easy.

To find out how these highlanders cope, researchers compared the DNA of 90 Tibetans to that of people who are not altitude adapted. And they discovered a single change that prevents Tibetans’ blood from becoming dangerously clogged with red blood cells—a response that can be deadly for non-native mountaineers. The finding is described in the journal *Nature Genetics*.

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