Scientists investigate why obesity is good for polar bears

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A polar bear's diet is rich in seal blubber and half of its own body weight is composed of fat *(PA)*

The secret of how the polar bear copes with a high-fat diet without getting a heart attack can be found in the creature's genetic makeup according to scientists who have analysed the genome of the world's greatest living land predator.

A study of the genomes of 79 polar bears from Greenland indicates that key genes enable the species to metabolise fats in the bloodstream and liver to prevent heart disease and the buildup of fatty deposits in the arteries and around the heart, a study has found.

A polar bear's diet is rich in seal blubber and half of its own body weight is composed of fat. It has cholesterol levels that would result in furred-up arteries and cardiovascular disease if they were seen in humans, scientists said.

"For polar bears, obesity is a benign state. We wanted to understand how they are able to cope with that. The life of a polar bear revolves around fat," said Eline Lorenzen of the University of California, Berkeley.

"Nursing cubs rely on milk that can be up to 30 per cent fat and adults eat primarily blubber of marine mammal prey. Polar bears have large fat deposits under their skin and, because they essentially live in a polar desert and don't have access to fresh water for most of the year, rely on metabolic water, which is a by-product of the breakdown of fat," Dr Lorenzen said.

The study, published in the journal *Science*, compared the genomes of the polar bear and its closest living relative, the brown bear. The analysis indicates that polar bears evolved from brown bears about 500,000 years ago and quickly became specialists in eating a high-fat diet, who was essential for surviving almost solely on seal blubber.

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