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Take a nap — hibernating animals live longer!

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By Jennifer Welsh



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Compared with the trudge to work through several feet of snow, winter hibernation sounds like a pretty cushy lifestyle. But it's not a dislike of cold, wet feet that drives some animals into a wintry slumber. It seems they hibernate because it's easier to stay alive that way, possibly by escaping predators.

A new analysis examines the "life histories" of animals — previously published data on how long they live and [how many offspring](#) they have — in respect to whether or not they hibernate. Generally, smaller animals live shorter lives and larger ones live longer, but hibernating animals seem to be the exception, the researchers said.

"We found that small hibernating mammals have slow life histories for their body mass, and this correlates to their high survival," said lead study researcher Christopher Turbill at the Research Institute for Wildlife Ecology in Vienna, Austria. Generally, the small hibernating mammals live longer and [reproduce slower](#) than small non-hibernating mammals.

During hibernation, animals go into a [low-energy state](#), basically sleeping through the winter in a safe place and surviving on the body's fat stores. They don't move much, lower their body temperature and slow their breathing and heart rates. The slowdown allows the animals to survive on much less energy during the snooze state. Hibernation and similar states can be found among a variety of animals, including bats, other



Oivind Toien / Institute Of Arctic Biology, University of Alaska Fairbanks

This black bear, captured in Alaska as a nuisance, was just placed in an artificial part of hibernation research conducted by Oivind Toien, research scientist with Arctic Biology at the University of Alaska Fairbanks, and first author of an upcoming paper in Science on bear hibernation, and Brian M. Barnes, senior author on the same paper and IAB director.

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mammals and marsupials, and even some birds and snakes.

The researchers found that during hibernation, animals were much less likely to die, so those species that hibernated were able to reach [higher maximum life spans](#) (the [longest observed lifetime](#) of a member of the species), but they sacrificed how many offspring they had each year, Turbill said.

Past observations also suggested hibernating animals live longer, but the reason was generally thought to be that they don't have to compete for food or struggle with the harsh temperatures of winter, as their non-hibernating relatives do.

For example, a non-hibernating rodent that weighs about 4 ounces — say, a medium-size rat — has a 17 percent chance of surviving the year, lives a maximum of 3.9 years and is able to have up to 14 offspring every year. A hibernating rodent of the same weight has a 50 percent chance of surviving each year, and therefore the maximum life span for its species is substantially longer: 5.6 years. However, it has about half the offspring each year, around eight.

Turbill believes the key difference is that hibernators face less [pressure from predators](#). This makes it easier to survive the winter, though the hibernators miss out on the reproductive opportunities they would have had awake.

"There may be enough energy (available to these animals) to survive, but not enough to reproduce," Turbill told LiveScience. Still, he said, "if you hibernate you stand a very good chance of surviving until conditions improve and you can reproduce."

The study was published Tuesday in Proceedings of the Royal Society B: Biological Sciences.

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