



Hibernation

18/02/2011, 10:12

# One breath per minute

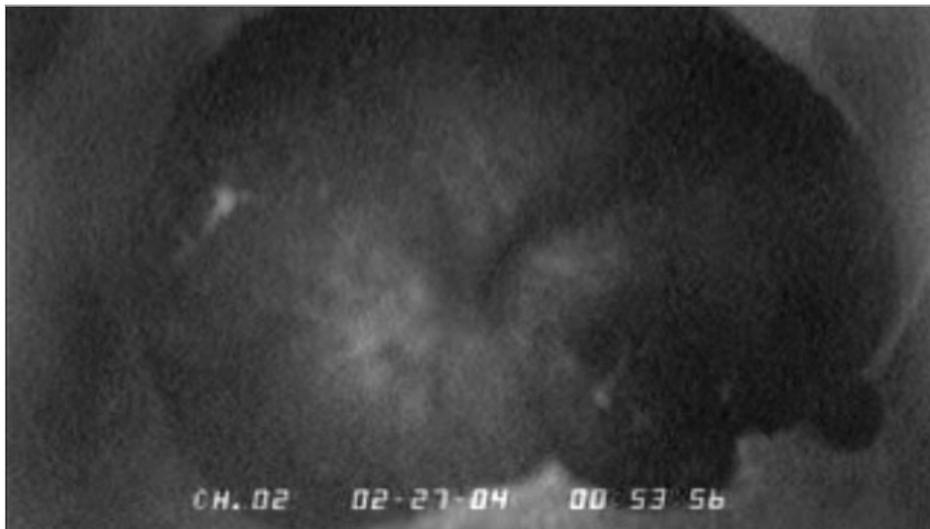
Katrina Blawat

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To black bears, biologists have amazing details about the hibernation caught - and now suspect that more animals than previously thought, put a time in similar conditions.

1. a breath per minute
2. Sapping waking

Five American [black bears](#) have done what many scientists are trying in vain all his life: a concept dear to add a new dimension and the previous view to be much too simplified to represent.



In the case of the black bear is about to hibernate, or turn to the question: Does he sleep at all, the bear - or he just lies? The surprising data that biologists Øivind Tøien from the University of [Alaska](#) Fairbanks in *Science* presenting qualify, the Black Bears now positively identified as hibernators (vol. 331, p. 906, 2011). Moreover, the results suggest that more animals than previously thought put temporarily in hibernation-like state.

Its metabolism drives the black bear in the winter back to a quarter of the usual summer rate. Amazingly, his body temperature drops only about five or six degrees to about 30 degrees Celsius.

The fact that an animal can survive in this relatively high body temperature for months, even though his metabolism is minimal, surprised even the researchers. In

addition, the bear after the end of his [winter sleep](#) needs up to three weeks until he fully metabolism again the summer has run up to its mode.

Very sparingly in winter to the Bears go with their breath: only one or two times a minute, they breathe. Only during this moment, the animals have a nearly normal heart rate of 55 But after a breath may take up to 20 seconds before the bear's heart beating again. On average, get the animal as a pulse of 14

Their findings about the inner life of bears due to two small research stations that they had used five black bears. While the animals for five months unmolested in their caves imagined that the biologists recorded every movement. And so steadily accumulated evidence for her theory that animals and their metabolism at a relatively high body temperature can be drastically reduced.

So far, extensive studies on the limited body functions winter sleeping animals mostly on small mammals such as marmots, bats and several squirrels. Their data had shown a different sleep pattern. The metabolism of marmots, for example, working during hibernation with only two percent of the usual summer rate and their body temperature falls extremely, almost to the freezing point of body fluids.

However, watching the small mammals on every two weeks for several days, during which time their body functions largely return to normal. It is possible that sleep disruption is needed to the immune system not to completely halt and prevent neuronal damage which may arise from the long periods of low body temperature.

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