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Video: Hibernating bears drop metabolism - and snore

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By Elizabeth Weise, USA TODAY

In a finding that surprised scientists, hibernating black bears only reduce their body temperature slightly during their November to March slumbers, even though their metabolic activity drops to a quarter of normal.

They also snore, as the amusing video here shows.

USA TODAY's Science team

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Smaller animals that hibernate tend to slow both their chemical and biological processes and temperature deeply. Prior to this study, data about Alaskan black bears hadn't been available, in part because dropping by their dens mid-winter isn't the easiest thing in the world to do.

To get around that Øivind Tøien and colleagues at the Institute of Arctic Biology at the University of Alaska-Fairbanks obtained bears who'd become too used to humans and had to be captured by the Alaska Department of Fish and Game. They took them into the woods and put them in wooden structures designed to mimic a bear's den, with straw for bedding.

Their paper is in this week's edition of the journal *Science*.

The faux dens were equipped with infrared cameras, activity detectors and other remote sensing devices. The scientists also implanted radio transmitters into each bear to record the animals' body temperatures, heart beats, and muscle activity.

What they found was that the bears only dropped their core body temperature to between 54 and 64 degrees from a normal of around 98. At the same time their heart rate went from 55 beats per minute to as few as nine.

The bears curled up in a posture "that facilitates heat preservation and water economy," they note. They changed position twice a day, when they "stood, occasionally groomed and rearranged bedding material," the researchers write.

After hibernating for five to seven months without eating, drinking, urinating or defecating they emerged from their dens in almost exactly the same physiological condition they had been when they went in. Their metabolism and temperature remained low for several weeks after coming out of their dens.

Some of their findings about the relationship between metabolism, body temperature and hibernation might be used to improving medical care or even for preparing for long space flights, the researchers say.

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