

Study delves into life of hibernating bears

By Joe Palca, NPR

For the first time, scientists say they have been able to monitor a bear's vital signs continuously during a six-month period of hibernation. To their surprise, the researchers discovered that despite lowering its metabolism by 75 percent, a hibernating bear's internal temperature barely drops at all.

The bear study took place at the University of Alaska, Fairbanks. The bears spent the winter in a hibernaculum – basically a big box. The researchers weren't sure whether the bears would be willing to spend the winter in this small, artificial cave.

“We anticipated they might just tear the place up or go on strike or something,” says Brian Barnes, one of the authors of the new study. “But they actually showed very natural behavior of getting ready to hibernate. They curl up, they go to sleep. They begin to quiet their heart rate, slow their breathing and their metabolic rate plunges.”

The fact that a bear could reduce its metabolism so much with such a small drop in temperature was a surprise. Barnes says two factors appear to be responsible. First, a bear has a lot of fat and thick fur, so it is well-insulated. Second, when a bear's internal temperature drops below about 90 degrees Fahrenheit (99 degrees is normal for a bear), it starts to shiver. The shivering produces heat, and the bear's temperature rises a few degrees. This periodic shivering occurs throughout the winter.

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