

PHYS ED

What Bears Can Teach Us About Our Exercise Habits

Scientists have found that grizzlies, like people, seem to choose the path of least resistance.



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Grizzly bears move across landscapes in much the same way as most people do, favoring flat paths over slopes and gentle speeds over sprints, according to a remarkable new study of grizzlies and how their outdoor lives compare to ours.

The study, which involved wild and captive bears, a specialized treadmill, apple slices and GPS trackers, expands our understanding of how a natural drive to save energy shapes animals' behavior, including ours,

and could have implications for health and weight management. The findings also help explain why, in the great outdoors, the paths of bears and people so often intersect, providing useful reminders about wilderness planning and everyone's safety.

Biologists and other scientists have become increasingly interested in recent years in how we and other creatures make our way through our surroundings. And while some preliminary answers have begun to emerge about why we choose to move and navigate as we do, the findings are not, on the whole, especially flattering.

Accumulating research suggests that we humans, as a species, are apt to be physically lazy, with a hard-wired inclination to avoid activity. In a telling 2018 neurological study, for example, brain scans indicated that volunteers were far more attracted by images of people in chairs and hammocks than of people in motion.

This apparently inborn preference for not moving made sense for us once, long ago, when hunting and gathering demanded hard effort and plentiful calories and resting under a tree did not. Being inactive is more problematic now, with food everywhere.

But the extent to which we share this penchant for physical ease with other species and whether these predilections affect how we and they traverse the world has remained unclear.

So, cue grizzlies, particularly those living at the Washington State University Bear Center, the nation's primary grizzly bear conservation and research center. University biologists affiliated with the center study how the animals live, eat and interact with humans.

Now, for the new study, which was published recently in the *Journal of Experimental Biology*, they decided to explore precisely how much energy grizzlies expend when they move in different ways and how those and comparable numbers might affect real-life behavior, not only of bears but of us and other animals.

To start, they constructed a sturdy enclosure around a treadmill originally built for horses. With modifications, it could tip up or down by as much as 20 percent, while handling the size and weight of a grizzly. At the front of the enclosure, the scientists added a feeding box with a built-in rubber glove.

Then they taught the center's nine male and female

grizzlies — most of them resident at the center since birth and sporting names like John, Peekka and Frank — to clamber onto the treadmill and walk, while sedately accepting slices of hot dogs and apples as a reward.

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“Grizzlies are very food driven,” says Anthony Carnahan, a doctoral candidate at Washington State University who led the new study.

By measuring changes in the composition of the air in the enclosure, the researchers could track each bear’s energy expenditure at varying speeds as they walked uphill and down. (The bears never ran on the treadmills, because of concerns for their safety.) Using this data, the researchers determined that the most efficient pace for the bears, physiologically — the one at which they used the least oxygen — was about 2.6 miles per hour.

Finally, the scientists gathered available information about the movements of wild bears, using GPS statistics from grizzlies in Yellowstone National Park, along with

mapping data and comparable numbers from past studies of people and other animals wandering through natural landscapes.

Comparing the data, the scientists found that wild grizzlies, like us, seem born to laze. The researchers had expected the wild bears to move at their most efficient speed whenever possible, Mr. Carnahan says. But in reality, their average pace traveling through Yellowstone was a pokey and physiologically inefficient 1.4 miles per hour.

They also almost invariably chose the least-steep route to get anywhere, even when it required extra time. “They did a lot of side-hilling,” Mr. Carnahan says.

Interestingly, these speeds and routes resembled those of people when picking routes through wildlands, the researchers noted.

Taken as a whole, the findings suggest that the innate urge to avoid exertion plays a greater role in how all creatures, great and small, typically behave and navigate than we might imagine.

The study does not rule out, however, that grizzlies, like

other bears, can move with sudden, staggering speed and ferocity, when they decide to, Mr. Carnahan points out. “I’ve seen a bear run across a mountain meadow in six or seven minutes, when it took me all afternoon,” he says.

The results likewise do not tell us that we humans are fated always to hike slowly, sticking to the flats, but only that it may require mental as well as physical effort and goal setting to avoid defaulting to the easiest routes.

Finally, the study is a bracing reminder that we share the outdoors with large apex predators who may naturally pick the same pathways as us. You can find useful information about remaining safe in grizzly country at the website of the Interagency Grizzly Bear Committee.