# Cheetahs’ ears help them run, and they’re not the only animal whose ears do double duty

Animal ears may not get as much attention as cool eyes or weird noses, but the glorious cheetah owes its running prowess in part to its inner ear.

The cheetah is, famously, the fastest land animal; it can run up to 65 miles per hour. During these sprints, its muscles are straining hard, but its head remains completely still so the cheetah doesn’t lose balance. New research, published today in the journal *Scientific Reports*, suggests this is because the cheetah’s inner ear (the part inside, which we don’t see) is unique among large cats.

Researchers used high-resolution imaging to look at the skulls of 21 animals, including seven modern cheetahs, other large cats, and a closely related cheetah that is now extinct. Based on the scans, the scientists created 3D images of the inner ears, and found that the cheetah ear has a bigger volume than those of other cats. Two of its three inner-ear canals are also longer. This makes it more sensitive and helps the cheetah keep its head still.

Of course, the cheetah isn’t the only animal with unusual ears. Here are a few more creatures whose ears do double duty – or are just plain weird.



The African elephant is the largest land animal, and it has enormous ears to match. Of course, their hearing is excellent. They make more than 70 different calls, and they know to call during the night when it’s quieter and sound carries better. In optimum conditions, they can hear sounds from six miles away.

Elephant ears are so large not only because they funnel sound into the inner ear better, but because they can be used as fans to keep the elephants cool, scientist Joseph Soltis told *Science Friday*. Also, the ears can be used to make the animals more threatening – when elephants fan their ears, they look larger.



*Photo: Animal Press / Barcroft Images / Barcroft Media via Getty Images*

The fennec fox is the smallest fox in the world, but it has enormous ears that stick straight up, like the ears of bats. These allow the tiny creatures to hear prey, like insects and little rodents, that are moving below the surface of the ground.

The giant ears aren’t just for hearing, however. They also function as a sort of AC: the fox lives in the desert, and the ears help the creature dissipate heat and stay cool.



Fish don’t exactly have external ears. Instead, they hear in a variety of ways. Many fish have a visible line across their body. This is called a lateral line, and it’s made of tiny organs that detect motion and also transmit sound vibrations to the inner ear. Other fish are able to hear because of the swim bladder, a pouch inside their bodies that helps them stay afloat. The back part of the swim bladder works like an ear drum and, again, helps transmit sound waves to the inner ear.

Just… see for yourself.

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