

Dolphins have ability to sense electrical signals

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Credit: Wikipedia

In a new study published in the *Proceedings of the Royal Society B*, researchers reveal the discovery of how the Guiana dolphin, *Sotalia guianensis*, is able to sense electric fields of prey in the water using structures found on the animals head.

While electroreception is often seen in fish and amphibians, it is not

common in [mammals](#). As a matter of fact, until this new research, the only mammal to show the ability to sense electric fields was the [platypus](#).

The researchers, led by Wolf Hanke from the University of Rostock in Germany studied some rare captive Guiana [dolphins](#) at a zoo in Muenster, Germany. When examining the rostrum of the dolphins, or the forward part of the head that contains the jaw, the researchers noticed small depressions. When one of the dolphins died, the researchers examined these depressions and found that they are crypts and hold [whiskers](#) when the dolphins are in the [womb](#). These whiskers later drop off after the dolphin is born. It had been assumed these were just the depressions left after the whiskers were gone, but the researchers believed they were somehow still aiding the dolphin's senses.

Turning to the remaining dolphin in captivity, the researchers trained the dolphin to rest its head on a platform fitted with electrodes designed to deliver electrical signals into the water. When the researchers delivered a signal, the dolphin was rewarded if it swam away. If there was no signal, the dolphin was rewarded for staying in place.

To prove that the signal was indeed being sensed through these crypts, the researchers then fitted the dolphins with a plastic shield that covered the crypts. With the shield in place, the dolphin did not move regardless of whether an electrical signal was present or not.

The Guiana dolphin is similar to the more commonly known bottlenose dolphin but lives off the east coast of South America. Similar to other toothed cetaceans, the Guiana dolphin hunts and locates prey using echolocation, or sound waves.

While echolocation is good for finding prey from a distance, it does not work well at close range. The Guiana dolphin routinely feeds at the bottom of the ocean where the water can be very murky. It is here that

the researchers believe that electroreception comes in handy.

The researcher's next plan is to examine other dolphin species to see if they too have the same ability.

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