

Leprosy confirmed in wild chimpanzees

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A chimpanzee named Woodstock with leprosy in Ivory Coast. Credit: Tai Chimpanzee Project

Leprosy has been found in wild chimpanzees for the first time, a new study reveals.

Researchers have confirmed cases of the disease among two unconnected West African populations of chimpanzees, in Guinea-Bissau and the Ivory Coast.

Analysis published in the journal *Nature* shows the strains of leprosy are different, and both are uncommon among humans.

The origins of the infections are unclear, but the research team—led by the University of Exeter and the Robert Koch Institute—say the findings show leprosy is probably circulating in more [wild animals](#) than was previously suspected, either as a result of exposure to humans or other unknown environmental sources.

Humans are considered the main host for *Mycobacterium leprae* bacteria, which cause leprosy, but "spill-over" to other mammals such as nine-banded armadillos and red squirrels is known to occur.

"This is the first confirmation of leprosy in [nonhuman animals](#) in Africa," said lead author Dr. Kimberley Hockings, of Centre for Ecology and Conservation on Exeter's Penryn Campus in Cornwall.

"It's amazing that it also happens to be in our closest living relative, the chimpanzee, especially considering how well studied chimpanzees are in the wild.

"We first noticed possible symptoms of leprosy in a population of chimpanzees in Guinea-Bissau.



A chimpanzee named Woodstock with leprosy in Ivory Coast. Credit: Tai Chimpanzee Project

"The symptoms appeared to be strikingly similar to those suffered by humans with advanced leprosy, including lesions and 'claw' hand.

"We contacted Professor Fabian Leendertz from the Robert Koch Institute to confirm these cases genetically."

Following these findings, Professor Leendertz and Dr. Roman Wittig from the Max-Planck-Institute for Evolutionary Anthropology identified further cases of leprosy at their study site, Tai National Park, Ivory Coast.

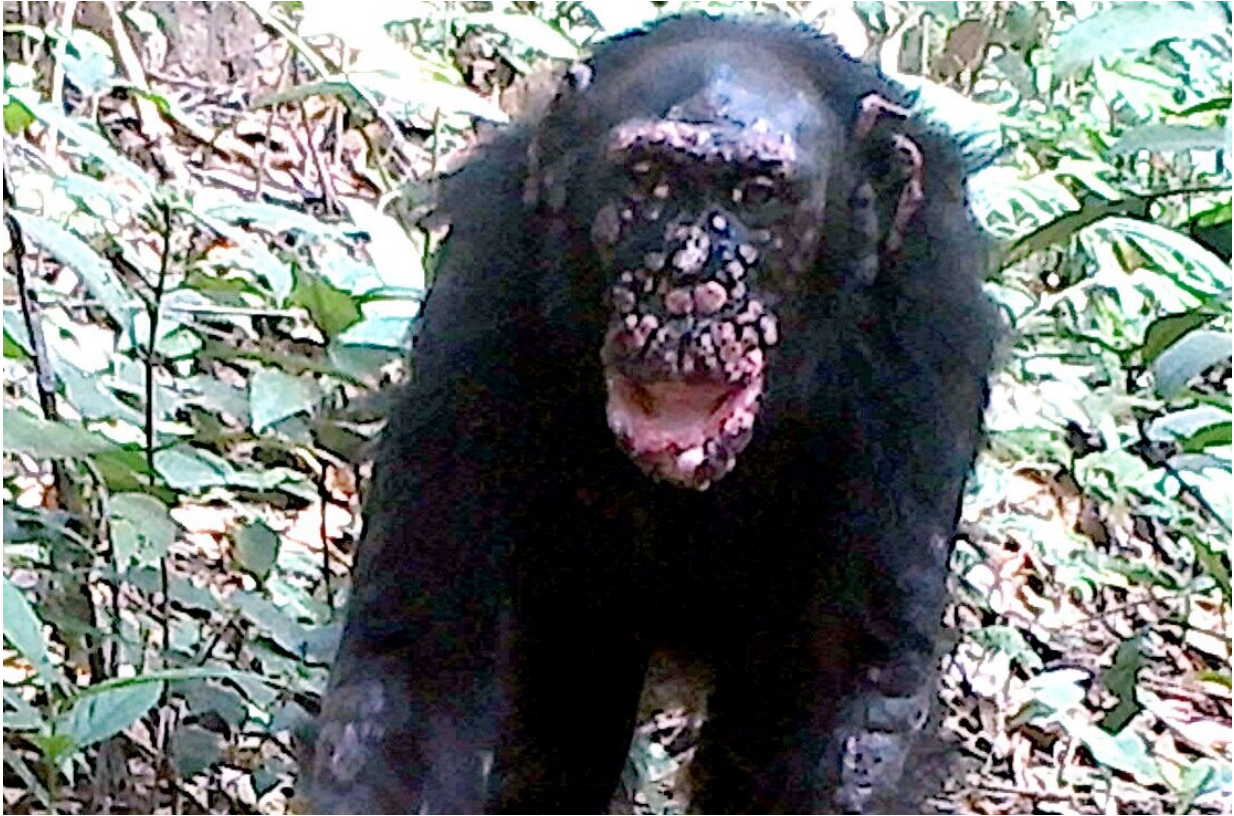
An autopsy of an older female, as well as faecal samples of an adult male that started showing symptoms, also confirmed leprosy.

Although the study is the first to report leprosy in wild chimpanzees, there have been cases in captive chimps.

"The strains identified in each chimpanzee population are different, and both are rare in humans and other animal reservoirs worldwide," said Dr. Charlotte Avanzi, from Colorado State University.

"This study unlocks a new step toward the understanding of the disease transmission in endemic countries and more investigations will eventually shed light on the dynamic of transmission between human, animal and environmental sources."

Dr. Hockings added: "In Guinea-Bissau it is possible that chimpanzees somehow acquired leprosy from humans in this shared landscape, although people do not kill or eat chimpanzees.



A chimpanzee named Brinkos with leprosy in Guinea-Bissau. Credit: Cantanhez Chimpanzee Project, Elena Bersacola, Marina Ramon

"It is clear that leprosy is now being transmitted between separate chimpanzee communities."

Professor Leendertz added: "In the Ivory Coast, chimpanzees are more distant from human settlements and it seems more likely that the chimpanzees acquired the infection from another animal species, or from an environmental source such as ticks or bacteria living in water."

Leprosy in humans is easily treated with medication, but the impact on chimpanzees is hard to predict.

"Western chimpanzees are [critically endangered](#), so even the loss of a few individuals could be significant," said Dr. Hockings.

"Long-term health monitoring and research is needed to establish the scale and possible effects of [leprosy](#) among wild western [chimpanzees](#)," said Dr. Wittig.

The international research team included authors from West Africa, Europe and the U.S..

The study is entitled: "Leprosy in [wild chimpanzees](#)."

More information: Fabian Leendertz, Leprosy in wild chimpanzees, *Nature* (2021). [DOI: 10.1038/s41586-021-03968-4](https://doi.org/10.1038/s41586-021-03968-4).
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