

Chimps dying from AIDS-like disease, study says

By William Mullen | Tribune staff reporter
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A team of scientists, including two from [Lincoln Park Zoo](#), studying the wild chimpanzee population in Tanzania's Gombe National Park, has discovered chimps falling ill and dying of an [AIDS](#)-like disease, a surprising finding that researchers hope could lead to new insights into the disease process and ultimately to a [vaccine](#).

The study's results are being published in Thursday's edition of the British research journal Nature. The article reveals that Gombe chimps infected by certain strains of [SIV](#) [Simian Immunodeficiency Virus] can contract an AIDS-like disease. Infected Gombe chimps died 10 to 16 times more frequently during the study period than uninfected chimps.

The results overturn previous evidence that suggested that chimpanzees were immune from AIDS and that SIV [virus](#) infections in them were harmless. Researchers already knew that some wild chimpanzee populations had individuals infected with SIV from eating infected monkeys.

A strain of SIV at some point mutated to [HIV](#) [Human Immunodeficiency Virus] in wild chimps in Cameroon in West Africa, where it jumped into the human population when infected chimp meat was eaten by humans.

Over several years of surveillance, the study showed that 10 to 20 percent of the Gombe chimps were SIV-infected.

The knowledge that some SIV strains can cause AIDS-like disease in chimps is a unique opportunity, AIDS researchers say, to compare and contrast how the two closely-related viruses become disease-causing agents in two closely-related species -- chimps and humans. Being able to compare and contrast, they say, should speed up development of more effective AIDS therapies and vaccines.

"It is a pretty momentous study," Danny Douek, the chief of the human immunology section of the [National Institutes of Health](#) vaccine research center in Bethesda, Md. Douek is not a part of the Gombe project but he is looking for possible AIDS vaccines.

"You can regard the study as one that provides a missing link in the history of [the] HIV pandemic. If we identify the evolutionary adaptations, that opens us therapeutic avenues for HIV disease," he said.

The animals in the study are the same wild chimpanzees that have been followed continuously by scientists since famed primatologist Jane Goodall began watching them in 1960, a key factor in the new study's revelations because the animals were so used to seeing human scientific observers in their African forest home.

Two Lincoln Park Zoo scientists, Elizabeth Lonsdorf and Dominic Travis, set up a survey to assess the general health problems of the Gombe chimps. They trained Gombe park biologists to systematically but non-invasively gather data by following individual animals a day at a time, noting those that seemed ill or slowed by injury, collecting fecal and urine samples they left behind.

The zoo also trained Gombe park veterinarians how to conduct thorough necropsies – animal autopsies – in the field when a chimp died. They took relevant tissue and fluid samples, put them in preservatives and sent them to [Chicago](#) for analysis by veterinary pathologists at the [University of Illinois](#) Veterinary School of Medicine.

Londorf's and Travis' chimpanzee health survey dove-tailed perfectly with a project already up and running at Gombe by University of [Alabama](#) at [Birmingham](#) AIDS researcher Beatrice Hahn, the principle author of the Nature article. She had been studying SIV-infected Gombe chimps for several years.

"Their roles were critical" in reaching the findings, said Hahn. "This long-term health monitoring system was all their idea. There is no other chimpanzee field site that has such a system."

The necropsies provided were also crucial, said Hahn. Without it, the study would not have been able to show how the SIV strain in the Gombe chimps caused the health declines, "so their contribution was essential" to the project.