

Wild animals may contribute to the resurgence of African sleeping sickness

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Wild animals may be a key contributor to the continuing spread of African sleeping sickness, new research published in *PLOS Computational Biology* shows. The West African form of the disease, also known as Gambiense Human African trypanosomiasis, affects around 10,000 people in Africa every year and is deadly if left untreated.

The disease is caused by a brain-invading parasite transmitted by bites of the [tsetse fly](#), and gets its name from the [hallmark symptoms](#) of drowsiness and altered sleeping patterns that affect late-stage patients, along with other physical and neurological manifestations including [manic episodes](#) and hallucinations that eventually lead to coma and death.

Despite numerous previous studies showing that animals can be infected with the parasite, the prevailing view has been that the disease persisted in its traditional areas almost only because of human-to-human transmission. A new study, from an international team of researchers led by the London School of Hygiene & Tropical Medicine, challenges this assumption by using a mathematical model to show that the disease not only can persist in an area even when there are no human cases, but probably requires the presence of infected wild animals to maintain the chain of transmission. The authors' model was based on data collected in active screening campaigns between November 1998 and February 1999 in the Bipindi area of Cameroon. One of the species in the data group was the White-eyelid mangabey, pictured below.

The research provides an attractive explanation for why sleeping sickness survives in places which have undergone intensive efforts to find and treat infected people in the community. It suggests that efforts to eliminate the disease must factor in the wild animal populations.

"This research suggests that targeting human populations alone, the main current control strategy, might not be enough to control the disease," says Sebastian Funk, the lead author of the study. "Maintenance of transmission in wild animal populations could explain the reappearance of sleeping sickness in humans after years without cases."

More information: Funk S, Nishiura H, Heesterbeek H, Edmunds WJ, Checchi F (2013) Identifying Transmission Cycles at the Human-Animal Interface: The Role of Animal Reservoirs in Maintaining Gambiense Human African Trypanosomiasis. PLoS Comput Biol 9(1): e1002855. [doi:10.1371/journal.pcbi.1002855](https://doi.org/10.1371/journal.pcbi.1002855)

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