

Press release

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Health care in baboons

Sexually transmitted diseases reduce the willingness of female baboons to mate

Göttingen, December 4, 2019 - Sexually transmitted diseases are widespread among animals and humans. Humans, however, know a multitude of protective and hygienic measures to protect themselves from infection. An international research team led by scientists at the German Primate Center (DPZ) - Leibniz Institute for Primate Research has investigated whether our closest relatives, the primates, change their sexual behavior to minimize the risk of contracting a sexually transmitted disease. At Lake Manyara National Park in Tanzania, researchers observed the mating behavior of olive baboons infected with *Treponema pallidum*. It was found that the females avoid mating if either the male or the female themselves showed visible signs of the infection. Males, on the other hand, did not change their behavior. (Science Advances, 2019)

Treponema pallidum subsp. *pertenue* causes ulcers in the genital area of baboons in East Africa that lead to severe distortions of the genitalia as the disease progresses. The pathogen also affects other monkey species. In humans, the bacteria causes yaws, which especially in children, leads to skin lesions and ultimately to severe bone and cartilage damage. Affected humans are physical disabled and stigmatized. Yaws is primarily transmitted via skin-to-skin contact and is currently the subject of a WHO campaign to eradicate the disease by 2030. Closely related to the yaws pathogen is the syphilis pathogen, *Treponema pallidum* subsp. *pallidum*. Syphilis is also one of the most common sexually transmitted diseases in humans.

Olive baboons are found from Mali in West Africa to Ethiopia, Kenya and northern Tanzania in East Africa. A group of scientists of the German Primate Center, led by Dietmar Zinner and Sascha Knauf, studied the mating behavior of the olive baboons in Lake Manyara National Park in Tanzania over 18 months. The study group consisted of approximately 170 baboons. Female olive baboons in peak estrus usually mate with more than one male. The peak estrus is indicated by a prominent swelling of their sexual skin. For her doctoral thesis, Filipa Paciência observed 876 mating attempts between 32 females and 35 males of which 540 led to copulations. In the vast majority of cases, the mating was initiated by the males. It was found that the females more often avoided mating attempts by males if the male or they showed visible signs of an infection. Compared to other studies of baboon populations that were not infected, a female in the study group had on average fewer mating partners.

"Our findings indicate that the risk of contracting a sexually transmitted disease can produce individual behavioral changes that could lead to a change in partner choice and potentially reduce the degree of promiscuity in a nonhuman primate population," summarizes principle investigator Dietmar Zinner.

Original publication

Paciência FMD, Rushmore J, Chuma IS, Lipende IF, Caillaud D, Knauf S, Zinner D (2019): Mating avoidance in female olive baboons (*Papio anubis*) infected by *Treponema pallidum*. Science Advances

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The German Primate Center (DPZ) – Leibniz Institute for Primate Research conducts biological and biomedical research on and with primates in the fields of infection research, neuroscience and primate biology. The DPZ maintains four field stations in the tropics and is the reference and service center for all aspects of primate research. The DPZ is one of 95 research and infrastructure facilities of the Leibniz Association.

Click on this link **for printable pictures**: <https://owncloud.dpz.eu/index.php/s/i4yQuuo4xdUt8BS>

The press release can also be found on our [website](#) after the embargo. Please send us a copy of the press release when it is published.

Photos with captions



Dr. Dietmar Zinner is a senior scientist in the Cognitive Ethology Laboratory at the German Primate Center. Photo: Karin Tilch



Dr. Sascha Knauf investigates neglected tropical diseases. Since 2011 he has been active as a scientist in the Infection biology section at the German Primate Center and since August 2019 he is head of the Department of Microbiology and Animal Hygiene at the University of Göttingen Department of Animal Sciences. Photo: Karin Tilch



Dr. Filipa Paciência researched the mating behavior of *Treponema pallidum* infected baboons and completed her doctorate in the Cognitive Ethology Laboratory at the German Primate Center. Photo: Paulina Mkama



A female olive baboon at peak estrus rejects the mating attempt of a male. Photo: Filipa Paciência



Genital ulcerations of an olive baboon infected with *Treponema pallidum* impacting the sexual swelling of the female. Photo: Filipa Paciência